

CALICO Monograph Series Volume 13

Researching Language Learner Interactions Online: From Social Media to MOOCs

Edited by
Edward Dixon and Michael Thomas

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| Vickie Karasic | Bonnie Youngs |

CALICO

Researching Language Learner Interactions Online: From Social Media to MOOCs

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Edited by

EDWARD DIXON

University of Pennsylvania

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CALICO Monograph Series

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Chapter 1

Introduction

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This timely volume addresses new empirical research on language learning in digitally mediated environments as well as new research approaches for effectively understanding the complex interactions taking place online. This dual focus distinguishes the volume from existing books in the field and is based on a recognition of the need for qualitative, multimodal, and mixed methods research approaches that aim to capture a holistic understanding of learner interaction and of the ways learners communicate, interface with computers, and navigate through websites and other spaces.

According to advocates, social network sites and new learning spaces like massive open online courses (MOOCs) are set to have an unprecedented impact on educational practice and affect the ways students engage with language and culture over the next decade. This volume examines the process of language acquisition in globally networked learning environments and the role that international interactions play in enriching the language learning experience and perspectives of world cultures. Chapter authors make important contributions toward a better understanding of how international interactions in online environments can achieve proficiency goals and aid learner interaction, intercultural understanding, and digital literacy skills.

In addition to discussing the potential contribution of MOOCs and social networks in terms of enriching the language-learning experience and preparing students for global citizenship through the study of a foreign language, authors address a multiplicity of issues affecting language education at pedagogical and institutional levels. At the pedagogical level, this volume examines instructional methods, learning strategies, personal learning environments, and lifelong learning. At the institutional level, it raises important questions pertaining to teacher readiness, accreditation, and articulation.

Overview of the Book

The book is divided into seven parts and consists of nineteen chapters written by twenty-nine authors from Asia, Europe, and North America, reflecting the di-

versity of research in the field of new technologies. In Part I, Reconceptualizing Learners, Milstein's chapter, Pancake People, Throwaway Culture, and En Media Res Practices: A New Era of Distance Foreign Language Learning, reflects on the changing role of learners engaged in online language learning. It argues that online environments need to evolve by developing new roles for instructors in order to reflect a more "eclectic, integrated, and flexible approach to teaching." Milstein identifies the characteristics of contemporary students who treat "learning artifacts as disposable" and are driven by a high degree of independence in terms of selecting information and their learning pathways. The chapter underscores the need to introduce forms of situated learning based on the potential of digital tools and a social model of learning involving gamification and digital storytelling, as well as more sensitive and holistic assessment procedures.

In chapter two, English Language Teaching Apps: Reconceptualizing Learners, Parents and Teachers, Chik investigates the discourse promoting the use of iPads in education, particularly with young children. The use of tablets has blurred the boundaries between the social and educational use of technologies, and the research in this chapter reports on the analysis of 124 tablet applications promoting the use of English language learning. Contrary to the perception that digital technologies underpin learning strategies based on collaboration and interaction, the research draws on positioning theory to identify how the use of applications on portable digital devices such as tablets may promote other forms of learning in the field of English teaching.

Part Two, Massive Open Online Courses, includes three chapters on this emerging phenomenon. In Clustering, Collaboration and Community: Sociality at Work in a cMOOC, Lewis, Comas-Quinn, and Hauck from the UK Open University discuss how learners collaborate in massive open online courses rather than pursuing more individual learning styles. Using sociality theory which explains the importance of learner empathy and altruism, research arising from an 8-week MOOC on open translation practices, the chapter explores collaboration in the online environment focusing in particular on forum postings, networking, and clustering. The MOOC was designed according to the principles of a network-based connectivist approach. Findings from the study suggest that human sociality theory can be used to underline the importance of social characteristics in the formation and maintenance of online learning communities.

In The Role of Interaction in MOOCs and Traditional Technology-Enhanced Language Courses, Rubio discusses the relationship of the new affordances of Web 2 technologies to interaction in three types of technology-enhanced courses (blended, online, and MOOC). Applying Moore's and Anderson's theoretical models, Rubio evaluates in each of these different learning environments three forms of basic interaction: student-to-student, student-to-instructor, and student-to-content. After analyzing student data from blended, online and MOOC courses, Rubio provides valuable insights into the ways different technology-enhanced learning environments support interaction and affect learning behaviors differently. His findings are particularly insightful and practical for improving and evaluating the design and delivery of technology-enhanced courses.

In the final chapter from this section, Face-to-Face, Online, or MOOC: How the Format Impacts the Assessment, Dixon and Fuchs explore how course assignments and assessments change based on the mode of delivery. Whether instructors teach F2F, online, or in a MOOC, the authors assert that the proficiency goals we set for our students need not change. What is different are the affordances of these different learning environments and the technologies we use to help students to achieve proficiency. This chapter explores both the similar and dissimilar pedagogical elements in F2F, online, and MOOC courses and examines to what extent these different learning formats influence the selection and development of both content and skills-based activities and their respective assessments.

Part Three, Digital Video, explores the increasing significance of video in teaching and learning since the rise of Web 2.0 technologies. Karasic and Vedantham's chapter, Video Creation Tools for Language Learning: Lessons Learned, examines the increasing status of video in the context of flipped and blended learning in particular. Based on data arising from course observations, interviews and questionnaires with faculty and students, the research identifies the importance of a range of factors including what video tools are currently available, faculty and learner perceptions of digital tools and their usefulness, and the role attributed to the library in aiding technology support, course development and integration.

In Researching Machinima in Project-Based Language Learning: Learner-Generated Content in the CAMELOT Project, Thomas describes a research approach arising from a two-year European Union funded project on the use of digital video in immersive digital games and virtual environments. The use of in-world recorded video productions (or machinima) can be used to stimulate task-based learning, learner motivation, and engagement in authentic contexts. Machinima is a portmanteau word that combines 'cinema' and 'machine' and refers to filming actions, role plays, and dialogues between 3D virtual characters or avatars. Learners and instructors engage in a variety of creative preparation and planning tasks such as rehearsing, scripting, and storyboarding. Users can then edit and re-film where appropriate to construct a complex and sophisticated video narrative that is potentially of immense value in a variety of fields, equipping users with a variety of technical and digital literacy skills as well as presenting opportunities for language practice. While there is a growing body of research literature on virtual worlds and digital gaming, little research has specifically addressed synergies between it and machinima in language learning contexts. The project indicates that machinima has significant potential for underpinning a learner-centered approach, emphasizing the importance of harnessing learner creativity, user-generated content, task-based language teaching, and repositories of digital content in contemporary language learning environments mediated by technology. In conclusion the chapter calls for more innovative research approaches to investigate the complex and creative technology-mediated environments in which contemporary learners collaborate and interact in foreign languages.

In Task-Based Investigation of Learner Perceptions: Affordances of Video-based eTandem Learning, Akiyama examines the affordances of telecollaboration for language learning and intercultural competence. Participating in this study

were 12 pairs of language learners from the US and Japan who reciprocally taught each other their language and culture. Akiyama begins with a theoretical framework for her research by examining different perspectives in telecollaboration research and affordance theory. For her study, Akiyama developed a video-based eTandem project using Skype. In this project students took responsibility for each other's learning without the instructor's mentoring. This type of telecollaborative set-up required a great deal of learner engagement which participants prepared themselves for by learning corrective feedback methods to help each other with error correction. Sessions began with free conversations and proceeded then to task-based discussions. After investigating the interactions between the learners, Akiyama describes the opportunities for increasing L1 awareness through telecollaboration.

In Part Four, Social Networking, three chapters investigate networking. In Exercising Learner Agency In Forum Interactions: On A Professionally Moderated Language Learning Networking Site, Vandergriff reports on the computer-mediated discourse analysis (or CMDA; Herring, 2004, 2013) of asynchronous forum interactions on the language learning social networking site *Deutsch für Dich* ('German for You,' henceforth *DfD*), a platform hosted, moderated, and tutored by the Goethe Institute that is open to any user around the globe. German is both the target language as well as the learners' common language. In this online community of practice, where learners negotiate questions of language, language learning, and culture with professional tutor-moderators, native speakers, and other learners, language learning is conceptualized as a dynamic and interactive process. Because *DfD* allows learners to choose what to learn and how to learn it from a range of options, *DfD* can be said to promote learner agency, a concept widely hypothesized to correlate with language learning success (e.g., van Lier, 2008). Using CMDA, this study analyzed to what extent *DfD* discourse yields evidence of learner agency. Specifically, Vandergriff focuses on features of discourse that indicate that learners are exercising agency (i.e., in planning, initiating, and self-regulating learning) in approaching learning content and in target-language communicative interaction.

In Language Learner Interaction in Social Network Site Virtual Worlds, the Christensen study investigates the efficacy of online language education in a social network site. The underlying principle of their investigation is the supposition that social interaction is at the core of learning. Proceeding from this principle, they research the interactions between Japanese language learners and native speakers in a virtual learning environment and identify factors including proficiency differences that either hinder or promote collaborative language learning. Their research lends itself to a better understanding of the complex interactions in online language forums and MOOCs where communication takes place across linguistic, geographic, and cultural boundaries.

With the rise and popularity of social media, Blattner, Dalola and Lomika cite the growing opportunities for students to develop intercultural knowledge in our globally interconnected world. In their study, Tweetsmarts: A Pragmatic Analysis of Well Known Native Speaker Tweeters, they investigate how social media can

help students develop the linguistic competency to interact competently with native speakers and with people from diverse cultural backgrounds. Specifically, they focused on the sociopragmatic and cross-cultural benefits of having beginning learners of French read and analyze the tweets produced by well known native speakers. Through the tweets, learners familiarized themselves with discursive conventions related to the use of abbreviations and English words.

Part Five, Telecollaboration, includes two chapters. Schenker's chapter, *Telecollaboration for Novice Language Learners: Negotiation of Meaning in Text Chats between Nonnative and Native Speakers*, scrutinizes the communication behaviors of beginning language learners in one-on-one chats with native speakers. While most research on synchronous computer-mediated communications (SCMC) focuses on intermediate and advanced students, Schenker provides evidence in her study for the affordances of chat messaging for even beginning students to negotiate meaning, exchange information, participate in social interaction and thus support their own second language acquisition. Schenker's analysis provides fresh insights into how beginning students using SCMC are able with native speaking partners to modify output, utilize feedback, request help, and seek clarification. Her study suggests the use of SCMC by beginning students as an effective tool to practice emerging language skills in a collaborative, interactive, and authentic learning environment.

In *Learning On-the-Go in Institutional Telecollaboration: Anthropological Perspectives on the Boundaries of Digital Spaces*, Dahlberg and Bagga-Gupta explore flexible approaches to learning. The research focuses on an ethnographic study of languaging in classrooms utilizing digitally mediated communication in Sweden. Adopting the sociocultural and postcolonial theory lens, the research utilizes screen recording software to collect data from a course aimed at Italian for beginners in order to explore how online students create communities. TimeSpace and postcolonial theory are also used to explore the relationships developing in communities via the use of ThirdSpace and Hybridity. Findings arising from the research indicate that it is important to examine the ideologies of dominant paradigms associated with one-nation and one-language practices based on monolingual and monomodal forms of communication.

Part Five explores the role of online communities. Batardière's chapter, *Examining Cognitive Presence in Students' Asynchronous Online Discussions*, investigates the interactions between Irish undergraduate students and native French speakers in a task-based asynchronous threaded discussion. Her qualitative analysis reveals that asynchronous online interactions afford both learners and native speakers the opportunity to develop their intercultural knowledge, practice critical thinking skills, and challenge their attitudes towards various social issues. Batardière emphasizes the fact that the success of online discussions hinges on carefully designed tasks and interesting topics that are capable of initiating a discussion and that can lead to a conclusion or resolution of the issue. In her analysis of advanced learners' interactions with native speakers, she contends that instructor facilitation is more important at the design level rather than in the implementation phase where interaction begins.

White's chapter, Orientations and Access to German-Speaking Communities in Virtual Environments, elaborates on the potential for Web 2.0 technologies for developing communities outside the classroom. White discusses the importance of community building as a fundamental but often neglected *Standard* among the ACTFL Standards for Foreign Language Learning. In her research, White investigates the relationship between the language learners' perspectives towards membership in a target language community and the media tools they use to interact with others. Moreover, her data indicate the extent to which students see engagement in a German-speaking community as a goal in a beginning-level college course. She concludes by citing the need for language educators who can design online activities that will prepare their students to interact and engage with members of target-language and multilingual communities.

In *Language Students' Personal Learning Environments through an Activity Theory Lens*, Case underscores the potential and affordances of the internet for self-learning. She focuses on the agency of students to set their own goals for language learning and to apply technologies from their extracurricular lives to practice language and reach their objectives. While not ignoring the importance of structure and instructor feedback in formal language courses, she takes a bottom-up approach in her inquiry by asking beginning-level language students enrolled primarily in distance courses about their personal learning environments and their use of nonuniversity-provided tools. In her study, she notes the capabilities of even beginning language students to self-select technologies and engage in online activities that do not require the help of a teacher and go beyond traditional course requirements.

Finally, Part Seven focuses on learning analytics. In *Educational Data Mining for Elementary French On-line: A Descriptive Study*, Youngs, Moss-Horwitz and Snyder analyze a dataset from a 135 students totaling 958,636 transactions in a French On-Line course offered at Carnegie Mellon University in spring 2014. The purpose of this study was to describe trends related to learner behaviors in online courses. The information from the study show student performance in areas related primarily to correct response rates and time on task. With information on these and other learner behavior patterns, instructors and course designers gain insights into which content materials and activities are in need of improvement and which ones students effectively use in online language courses to maximize their learning.

In *Understanding Online Interaction through Learning Analytics: Defining a Theory-Driven Research Agenda*, Link and Li apply theory-driven approaches to the field of learning analytics for predicting student success rates in computer-assisted language learning and in the burgeoning area of MOOCs. Information obtained from analyzing and interpreting big data sets of online interaction patterns can help educators and researchers decide on the appropriateness of course content, effective instruction, and where learners need greater support in online environments. Link und Li cite the usefulness of large datasets that track, for example, time spent on social interaction, quizzes, and acquiring certain linguistic forms for a better understanding of learner interests and behaviors. As these 19

chapters indicate, research is developing quickly in these new areas of interest to both teachers and learners. We hope this collection provides insights into the ways students use and are motivated by social media to learn a new language and culture in online communities of practice. Furthermore, we hope it contributes to further research in the field and to the development of new approaches and methodologies with which to investigate the complex interactions taking place in digitally mediated environments, both inside and outside of formal education.

Chapter 2

Pancake People, Throwaway Culture, and En Media Res Practices: A New Era of Distance Foreign Language Learning

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Summary

As a new generation of traditional students is registered in courses with professional and adult learners, instructors and the online foreign language learning environments in which they teach must evolve to accommodate a spectrum of interpersonal needs and virtual behaviors. Facilitators must take an eclectic, integrated, and flexible approach to teaching: student-educator, educator-educator, and student-student boundaries are dissolving, and with this erosion arise new challenges and learning needs. In designing online courses, foreign language instructors must now take into account: the “pancake people” effect, the younger generation’s habit to view learning artifacts as disposable and untraceable, the adult learners’ and instructors’ need to archive and evaluate learning artifacts, and virtual learners’ preference to self-select and navigate learning bases at will. Instructors can design successful environments that fulfill learners’ transformative expectations only through situated and transformed practice, overt instruction, and critical framing. Digital learning and social tools, gaming and digital storytelling, and holistic assessment tools that are built to evaluate transcompetencies are different methods for achieving these goals.

1. Introduction

During a fall 2015 Canvas workshop to prepare modules for the Yale African Language Initiative (YALI), a Yale Center for Language Study colleague and I were discussing the growth of distance, student-driven language learning sites. YALI courses are designed to blend traditional students and continuing education professionals in a 5-week, summer session series on isiZulu, kiSwahili, Yoruba, or Wolof. In discussing the challenges we face to design a course with traditional and professional learners, we acknowledge the importance, too, of successful online courses that blend traditional and nontraditional educational materials. In distance education, one finds an embarrassment of riches in blended learning and blended learners: digital projects (websites, vLogs, and augmented reality games), social networking and crowdsourcing activities, and autonomous practice are increas-

ingly favored in lieu of formal and lengthy research papers; oral recitations, and fill-in-the-blank assessments. Today's "student" possesses an inherent ability to create stunning, interactive visuals; but, style now reigns over substance—there is no cogent argument; the chaotic, nonlinear form of websites makes comprehension difficult; and, perhaps strapped for time or mental energy, students neglect complex themes and patterns in the literature. As a French Language Instructor, I thought of the *Belletrists*'s (1600-1800 C.E.) focus on aesthetics function, of the *Rhétoriqueurs* (1460-1520 C.E.) visual play, and even as far back as biblical acrostics. I wondered: Did these groups endure the same criticism of sacrificing content to form? And if so, did their neologisms, their refusal to conform to a homogenized language, and their ludic approach to communication, outweigh any harm done?

We teach distance foreign language in what we call a "global world," where technology should ideally engage and immerse students in learning, and where language learning should aspire students to global citizenship. Yet, there is a clear disjuncture appearing in online classrooms. Spaces are no longer inhabited by traditional distance learning students or educators, and boundaries for student-teacher and student-student interaction have been pushed back or eroded. Increasingly, I wear multiple hats to facilitate an online class: I am a professor, an academic technologist, an instructional designer, a sociologist, and an industrial psychologist. I daily use, or hear my colleagues use, oxymoronic phrases that combine the words "silo" and "ubiquitous" in a single sentence. My typical distance French course includes military students, adult continuing education students, and advanced high school students; the only obvious commonalities they share are a commitment to a Christian-based education, abstention from consuming alcohol, and frustration with any standard French textbook marketed for the undergraduate four semester language series (where, they argue, Christianity is largely ignored, and oenophilia and nightclubs are heavily promoted in cultural inserts). In the past five years, I have observed the emergence of three trends in distance language courses:

1. "pancake people"—students who are spread too thin by the lure of self-paced, asynchronous online learning of a foreign language to meet a core credential or complete on-time learning;
2. "throwaway" or "trash" culture—a current tendency to view things as recyclable and replaceable; to value anonymity and retain multiple online identities and avatars; to be distrustful of institutions that gather metrics or personal preferences; and to use applications that produce self-destructing, untraceable, or instantly editable content;
3. "en media res" practices—because of points 1 and 2, students want to enter, navigate, and depart a knowledge base through random, self-selected points. In language learning, this leads to code switching, use of urban dictionaries, and frustration with standardized textbooks that do not replicate language as it is used in daily communications outside the origin culture (e.g., Haitian and Algerian French differs substantially from Parisian

French, yet most of my students will do their Christian missionary work in Haiti or Algeria rather than France).

If language learners enter the classroom with transformative expectations, how can faculty provide instruction that accommodates their ephemeral practices and ensures a permanent acquisition of the language's structure and meaning? Should we make assumptions about the 'naturalness' of cultural change among students using technologies for communicative and collaborative purposes for themselves in their own lives; what demands educational institutions, classrooms, teachers, and others can reasonably make of them; and what 'standards' we should aim for in supporting practice of learning through technologies?

Distance language educators are uniquely equipped to support autonomous learning and to create and promote situated meaning through the use of digital media and online learning. Gee and Hayes (2011) explain that

digital media are an interesting hybrid of the properties of oral language and of written language. Oral language is interactive but ephemeral (sound passes away quickly). It does not travel accurately because each person in a chain of communication can easily change it. Literacy is less interactive but permanent. It travels far and wide and it is harder to change as pieces of paper or books are passed down through a chain of people. (p. 77)

Students and faculty working in an online language environment have to endure paradoxes of ephemerality-permanence and their conflicted desire to interact and acquire lifelong knowledge with their desire for anonymity and asynchronicity. How do we teach language in a way that accommodates both? According to Warschauer (1999), students will be more engaged and purpose driven in a multimedia environment where the faculty strive for cultural literacy. We can achieve this through:

1. *situated practice*, immersion in meaningful practices within a community of learners;
2. *overt instruction*, active intervention on the part of the teacher to scaffold learning activities;
3. *critical framing*, attention to the historical, social, cultural, political, ideological, and value-centered relations of systems of knowledge and social practice; and
4. *transformed practice*, applying the knowledge gained from previous practice, instruction, and critical reflection to work in other contexts or cultural sites.

Therefore, I begin by contending that today's language classroom is heterogeneous: it is comprised of pancake people, throwaway culture, and *en media res* practices. In this article, I examine four types of multimodal learning environments that accommodate this dynamic based on four pedagogical practices of language instruction.

2. Situated Practice Theory: Making Global Citizens out of Language Learners—International Online Interactions through Social Networking

Throwaway culture dictates that cultural commodities be perishable, recyclable, and editable; no trace or artifact remain of the student's engagement with learning materials that could lead to crystallizing an identity for that student through metrics or harvesting his/her personal preferences and user activity. While Twitter, Facebook, Instagram, and Tumblr captivate adult learners and language facilitators, a new generation of learners has migrated to Kik, Snapchat, and applications like Guess-a-sketch to communicate and collaborate; students report there is more a sense of autonomy and of control over their learning environment.

Situated practice “involves building on the lifeworld experiences of students, situating meaning making in real world contexts” (Mills, 2006, p. 1). In the distance language learning environment, situated practice is most successful with learner autonomy—by empowering students not only to bring foreign language to their real lives, but also by enabling them to bring their real world contexts into the distance language learning environment. Michael Moore (1994) explains that learner autonomy is “at its greatest when learners determine their own aims, learning paths, and where they are not restricted when learning either by dialogue or a prescribed structure” (as cited in White, Holmberg, & Shelley, p. 132). In *Teaching and Researching: Computer-Assisted Language Learning* (2012), Ken Beatty outlines a methodology for designing distance language learning that aligns well with situated learning theory and learner autonomy:

1. conduct an appropriate needs analysis to better understand the end user: to begin with the internet rather than with language requirements and to bring online social networks to bear on practical learning even if no pedagogical model of instruction was used;
2. make use of public goodwill in creating and delivering content by practicing crowdsourcing, contributing time, and expertise;
3. consider a language learning model or approach.

Social learning apps that mostly appeal to the new generation of learners can replace low stakes immersion assignments with vocabulary building, informal dialogue, and ephemeral personal documentary.

2.1 Methodology

In a voluntary survey of 39 students enrolled in French 101 online (12 in fall 2012, 13 in spring 2013, and 14 in fall 2014), students were asked to play with and document their use of Kik, Snapchat, and Guess-a-Sketch to practice weekly vocabulary and grammar building over the 15-week term. Students wrote reflections at the term's end as part of a qualitative analysis of their user experience and perception of whether these social apps are adaptable for the distance foreign language environment.

Kik (<http://www.kik.com>) is a virtually anonymous messaging application through which a person's username serves as his identity; no personal or contact

information is visible to others. It serves as a cross-app messenger where users gather from social and game applications to chat with existing or new friends. Where messaging apps like WhatsApp? pose a privacy risk for students precisely because their personal contact information must be revealed to participate in a chat, Kik enables foreign language chatter to percolate on-the-go, throughout the day, in short bursts of participation, semi-incognito. Snapchat responds to the perils of self-identification by permitting users to create perishable “snaps” (messages containing photo, video, text, and drawings) that self-destruct 1 to 10 seconds after a recipient views them. Evan Spiegel, product owner, describes Snapchat as the antithesis to social networking sites like Facebook, where “people are living with the massive burden of managing a digital version of themselves” and “curating a perfected online image” (Colao, 2012). Snapchat offers the service Snapchat Stories, in which users add their Snaps together to create a story with a 24-hour lifespan. According to Snapchat, “your story never ends ... and each Snap in your Story includes a list of everyone who views it.” This offers a unique opportunity for students to create a dynamic image log of their day or of a cultural theme assigned in the course. Finally, building an online, multimodal dictionary or glossary is a final method that students can use to acquire language through social interaction. Students learn best when they can imprint words upon objects (or as semioticians would say, attach a signifier to a signified to make a sign). Tumblr, Instagram, and Pinterest allow for ease of development for multimodal dictionaries.

2.2 Data Collection: Kik

Students email the professor an impersonal username for the class roster, and are then able to start “Kik’n” it with peers and with international students based on the incognito username list that is distributed. Mobile chat applications are invaluable for learning language on-the-go, because students can narrate their observations over the course of a day (“what I ate,” “what I see outside right now,” “How my mom is dressed,” “What I am feeling”) and ask other users questions (“what is the weather like,” “do you like French,” “did you pass the math quiz”) and assimilate the foreign language to their narrative. Because there is no trace and the identities are impersonalized, students still require some training to avoid self-identification: no personal information (names of streets, localities, proper names) can be divulged, which is tremendously difficult to avoid when attempting to internalize a language.

2.3 Data Collection: Snapchat

Regent University builds a “spiritual life” discussion module into each weekly module. In my French course, this usually consists of a biblical passage in French that asks students to relate the passage to a challenge or lesson they are learning about themselves as a foreign language student. Snapchat Stories empowers students to engage less with reading and writing in a learning management system and more to immerse themselves as language speakers in a living environ-

ment. One student creates captures images of her hands in prayer, with captions in French about her feelings, her hopes, and a few revelations about her shortcomings. Another student “snaps” images of poverty in francophone countries, and describes the contrariness of environmental abundance with the stark lives of indigenous laborers. Students post their Snapchat Stories to their Snapchat every Friday, are asked to watch five Stories shared by their peers, and to write an informal reflection of what they learned about the weekly theme through the throwaway documentaries. Though some students are frustrated that a sensational social app has been integrated, these foreign language teasers and the anonymity of different student perspectives motivate others. Unlike social learning applications that identify users, concerns with bullying and segregation (at least in my coursework) is essentially absent, because no information is permanent and no identity is crystallized.

2.4 Data Collection: Guess-a-sketch

In the image in Figure 1, for example, an Asian student’s image of “France,” “Paris,” or “la tour” is shared with an American ePal. The game works successfully for mobile learning, and for building transcompetencies in cultural appreciation, spatial awareness, and visualization.

Figure 1
Guess-a-sketch



2.5 Data Collection: Multimodal Dictionary

In this low stakes activity, students are asked to take photographs of five objects or concepts that appear in their weekly language vocabulary (see Figure 2).

Figure 2
Multimodal Dictionary



They are then able to post the image, the vocabulary word and its etymology, and interactive links; peers are able to “like” and comment on the posts, to collaborate together to create a living, culturally relevant dictionary of terms, and to critique and build upon their peers’ interpretations and perspectives of how a word is defined.

2.6 Data Analysis

Activity	Learning outcome	Gee (2004) Standard for situated learning	ACTFL standard	Student perception of activity’s success to help achieve the ACTFL standard (# of students/39 and % of class)
Kik	to demonstrate intercultural communications by (a) using key terms and vocabulary for the week and (b) interacting with peers to share ideas about and interpret the phenomena of the target culture	Intensive and extensive knowledge are encouraged (code switching) Newbies and masters and everyone else share a common space	Engage in conversation Express feelings and emotions Exchange opinions Use language both within and beyond the school setting Show evidence of becoming lifelong learners by using the language for personal enjoyment and enrichment	7 (18%) 13 (33%) 7 (18%) 4 (10%) 3 (8%)

Snapchat	Use visual methods to show the vocabulary, concepts, and cultural practices of the target culture	Newbies and masters and everyone else share a common space	Understand and interpret language on a variety of topics Use language both within and beyond the school setting Show evidence of becoming lifelong learners by using the language for personal enjoyment and enrichment	37 (95%) 4 (10%) 4 (10%)
Guess-a-sketch	action to challenge a peer to identify key terms and vocabulary, actions, or cultural phenomena through visual games	Content organization is transformed by interactional organization Tacit knowledge is encouraged	Present information, concepts, and ideas to an audience on a variety of topics Use language both within and beyond the school setting Show evidence of becoming lifelong learners by using the language for personal enjoyment and enrichment	37 (95%) 37 (95%) 37 (95%)
Multimodal Dictionary		Individual and distributed knowledge are encouraged Dispersed knowledge is encouraged Tacit knowledge is encouraged	Demonstrate an understanding of the relationship between the products and perspectives of the culture studied and their own	37 (95%)

2.7 Results

Situated practice immerses students in meaningful language learning; “meaningful,” however, is a paradoxical term for this generation of learners who deride material, permanent artifacts of their social learning experiences. If students are less keen to collect and preserve their learning identities, how can we help them to affix language in their individual knowledge bases?

The results for Kik and Snapchat confirm student psychological tendencies to throwaway culture. That they were not significantly motivated to use Kik and Snapchat for lifelong learning of the language or to practice language learning outside the language classroom is not surprising given the ephemeral and perishable nature of these applications. Asking them to integrate and intentionally use

vocabulary, key terms, and cultural concepts was paradoxical and contradictory to the design and purpose of these applications and left students with a forced and frustrated response to those activities.

Interestingly, student-driven use of Guess-a-sketch and building a collaborative, multimodal dictionary online, seemed to enhance the situated learning environment and validate Merrill Swain's comprehensible output hypothesis (CO) that language learning is just as dependent upon meaningful output by the students as by meaningful input by the faculty, textbook, and learning environment and that students acquire language when "pushed to use alternative means to get across ... the message ... precisely, coherently, and appropriately" (Swain, 1985, pp. 248-249). To date, most research does not substantiate the CO hypothesis. Ellis, Tanaka, and Yamazaki (1994) tested student acquisition of vocabulary in three instances, based on prerecorded input from a native speaker for which a nonnative speaker could request clarification, interactionally modified input from which native and nonnative speaker could interact, and unmodified input in which two native speakers completed a task together. They discovered that only around 15% of the learners tested experienced a "meaning negotiation. The others simply listened" (p. 211). This experiment, and others by Pica (1988); Pica, Holliday, Lewis, and Morgenthaler (1989); Van den Branden (1997); and Lyster and Ranta (1997) seem to confirm that students can learn a language without producing it. However, Nobuyoshi and Ellis (1993) found in a small sample size that students were able to improve their vocabulary and request for clarification, while no gains were made in past tense accuracy. Tarone and Liu (1995) postulated that students used a broader range of speech acts when they interacted with an adult friend rather than with peers and teachers. The results of my (albeit small enrollment) French 101 online courses over a 12-month period suggest that using visuals in a collaborative environment to create a dictionary together enabled the students to negotiate different ways of communicating a word, key term, or cultural concept's meaning in the target language. Students found the shared, multimodal, and student-driven nature of these digital activities helpful, fun, and appropriate for creating a permanent visual record or archive of their learning activities.

3. Overt Instruction: Building Narratives

That we learn mnemonically explains why narratives and cultural inserts are affixed to foreign language textbooks. Twenty years past my Bachelor's degree, I still clearly recall scenes from *French in Action*—particularly, Mireille's mistreatment of her young sister Marie-Laure, which mirrored the sibling rivalry between my younger sister and me. Overt instruction "guides students to use an explicit metalanguage of design" (Mills, 2006, p.1). Stories communicate ideas through words, images, and gestures. Nevertheless, while a canon or textbook might "indoctrinate" users in a language or practice, users may also decry it as lacking universality because it is historically and culturally specific (Gee & Hayes, 2011).

Take, for example, this excerpt from an end-of-term review, composed by a class of 11 French students at our semester's end (a sort of *Breakfast Club* manifesto):

The textbook is organized well, and the color-coded sections and icons make it easy to find corresponding materials on the study space. The book takes students through a logical and relatively linear progression of a story and skills. All of that is good. Unfortunately, we find the focus of textbooks we're using in academic language courses somewhat frustrating. We understand that the stereotypical university student is between 18 and 22, and may very well be preparing to study abroad. However, neither of those characteristics describes the majority of the students in our course. Most of us have expressed a desire to communicate with people we might meet in daily life, or while doing missionary work abroad. We believe this is the focus of most adult foreign language learners, and why the majority of us prefer to use non-academic language tools like Instant Immersion—which charges just \$45 for three levels of French—to the impractical, overpriced packages used in the university curriculum Precisely because the curriculum package did not come with adequate materials, you have found many creative solutions to help us learn.

Dozens of studies have presented solutions for mixed demographics that have a mixed purpose and drive for learning a foreign language. Warschauer and Donaghy (1997) describe the first Internet communication system fully based on an indigenous language—Leokī (The Powerful Voice), the Hale Kuamo'o Hawaiian language curriculum. As a multimodal learning site comprised of public notices, conferences, a language books and materials store, a newspaper, and a live chat room, it represents the earliest and finest of overt instruction. Today, we link language communities through Twitter, ePals, and Facebook pages. We immerse students through synchronous chat rooms that subdivide into breakout rooms to mimic language lab group work. We create ePortfolios for classes to create digital collections, blog their personal stories in the target language, and pull in feeds and URLs to foreign language sites. These efforts work well on a macrolevel, but do not work well on a microscale. In *It's Complicated*, Danah Boyd reviews the correlation between technology and limited user demographic; Siri, for example, recognizes American English accents better than other Anglophone accents. Does this reflect a bias or discrimination—does it create “silos” of learners, and how does this reflect back on the technologies, which are supposed to be “ubiquitous”? Boyd (2014) explains that, “while technology does allow people to connect in new ways, it also reinforces existing connections.” Realistic stock taking of overt instruction with technology will reveal homophilous learning practices in the foreign language classroom: my distance education students affiliate on Twitter and in breakout rooms based on their gender, age, and lifestyle. They will contribute to class digital collections or write an ePal based on cultural interests that hint of their social class and upbringing. Sometimes disturbingly, they will call out on the forums any student perceived to be an outlier of their Christian ethic. The average French language textbook’s narrative about a young student exploring the perils and passions of college life in Paris does nothing to discourage these divisions.

How then, do we devise a relevant narrative for a specific distance learner audience, while also encouraging awareness and participation in the “other” culture?

We lack time to write and evolve custom textbooks for every online course, much less for every individual student.

4. Critical Framing: Communities of Practice: Continuing Study of the Target Language Beyond the School in Multicultural Online Settings

There is a sheer dissonance between the culture-of-use of students using anonymous, ephemeral-izing tools because they ‘do not want to be pinned down,’ ‘identified,’ ‘leave a trace,’ and so on, and the way that principles of Christian education are interpreted, enacted, and so forth. How do ephemerality and anonymity of communication practices through new media tools, communication and gaming environments, and the learner *subjectivities* that are implicitly if not explicitly cultivated through their use connect with discourses of the soul, of reflective spirituality, of social responsibility? Cynthia White (White & Holmberg, 2005) argues for a learner-context interface theory—the premise that a “meaningful theory of distance language learning must view the contribution of the learning context and the contribution of the learner as integral and reciprocal constructs” (p. 212). When students log out of an asynchronous course or a weekly seminar, how do they export and perpetuate use of that language outside the classroom? In critical framing pedagogy, students “critically analyze and interpret the social and cultural context and the political, ideological, and value-centered purposes of texts” (Mills, 2006, p.1). Attention is paid to how *race*, *milieu*, and *moment* ‘race,’ ‘place,’ and ‘period’ shape systems of knowledge and social practice. Roswell and Libben (1994) tout leaner autonomy as a healthy component of language learning in which students take charge of their own learning. Students learning a language through a game can acquire *functional control* by “creating meaningful forms of interaction or contexts for their learning above the activities presented in the course materials,” and limit *pedagogical control*, “in which learners delete, transpose, or change a set of tasks presented in the materials” (p. 144). Faculty have succeeded in using video games and phone apps to keep students engaged. Whether joining *Duolingo* for free and rewarding game play, signing up to play *Farmville* and other Facebook games on foreign language pages, or creating a character on a massive open online game, students seem to retain narrative in an immersive virtual environment where they can mask their identities and have fun socializing.

The language packs for games like *World of Warcraft* (*WoW*) add a dimension beyond the social conversations that take place in-game. *WoW* is inspired by a series of novels, and the lore and history of NPCs (nonplayer characters) appears as players interact to purchase items, get quests, and acquire information for gameplay. Peterson (2013) validly notes the frustration students may feel in early gameplay; if not used meaningfully and intelligently, students will have the impression that they are being challenged to learn a foreign language and the structure and strategy of gameplay. If the focus is on immersion, students may be bullied, learn gamespeak (i.e., “bm” means “beast” or “bitch” mode or “bad manners,” which refers to a player’s concern with winning at all costs rather than about fairness toward other players), or fail to connect with peers in the target

language. However, foreign language students immersed in gameplay do not have to engage in active gameplay to practice their language skills. Students can join a PvE server (player vs. environment, no attack by peers) and spend more time exploring and discovering the environment and characters; trace the history of a single NPC, pick up professions that will introduce them to the tasks and materials of the profession, window shop for objects or speak to storekeepers, examine the wardrobes and belongings of other players, and review the auction house.

Given the cultural obsession with zombies, I asked my students to follow the storyline of Lady Sylvanas, the “banshee queen,” military genius, middle sister, and leader of the Forsaken (a faction of the undead). As part of our dialogue and translation discussion in Advanced Composition and Conversation, we compare the French and English versions of Sylvanas’ storyline and dialogue with different characters, as in this conversation when Arthas uses necromancy on Sylvanas:

<i>“Achevez-moi, je mérite une mort digne ...”</i>	“Finish it, I deserve ... a clean death”
<i>“Après ce que vous m'avez fais subir, femme, je ne suis pas disposé à vous laisser en paix.”</i>	“After all you've put me through Woman, the last thing I'll give you is the peace of death!”

Students immediately notice a difference between “I'm not inclined to leave you in peace” (the class translation of the French) and “the last thing I'll give you is the peace of death.” “To be inclined” and to “leave in peace,” my students argue, suggests that the character might still be influenced, swayed in a different direction, or allow fate to take its course; the English original, on the other hand, shows resolve and determination to make the “woman” suffer and serve as the hand of death. The nuances raise interesting questions for the students in terms of affect and interpersonal dynamics based on their assumptions about French and American cultures. In game, they feel the French tend to romanticize and sensationalize male-female NPC relationships (even nonromantic ones), whereas Americans tend to depict a more brazen, violent dynamic between the sexes. Gonzales (2013) writes that

Communities of practice can be ideal environments for language learners, since in working to achieve a mutual endeavor, the act of social learning promotes communicative acts that generate input directly relevant for negotiation ... learners build social capital and establish an identity within TL communities. This situated learning style approach, which considers informal networks and groups as well as distributed and non-face-to-face contact, “is a significant rethink of learning theory.” (p. 102)

Education companies acknowledge the value of gameplay to motivate and immerse learners, but they also recognize the pitfalls of attempting to insert students into an environment intended for entertainment. Milton (2005) defines the principles of a good online course “system” as

- appealing to a wide range of leaner proficiencies and interests;
- motivating low-proficiency students to find intrinsic uses for the language;

- ensuring a coherent, planned, and progressive curriculum based on SLA theory;
- providing opportunities for self-discovery, participation, creativity, and individual learning paths;
- enabling teachers to act more as mentors and less as pedagogues; and
- enabling a transparent system of student and teacher accountability.

New learning systems like Classcraft may act as free gamification systems for the classroom, which will allow the faculty and students to role play, level up, and develop powers and outcomes. Similar to *WoW*, League of Legends, or a number of MMORPGs, students choose a character class (e.g., healer, mage, or warrior) and work in teams (e.g., a guild or instance party) to accomplish tasks. The platform includes a management system, forums, social networking outside the system, and game dashboard and allows the teacher to build core values (i.e., the amount of XP—experience needed to level up; the percentage grade over which students gain XP and under which they lose HP—experience versus health points), to assign fantasy powers to real-life skills (i.e., “teleport:” the mage can trade places with another classmate; “time warp:” the mage gains an extra eight minutes to beat an exam; “clairvoyance:” all of the team members get a hint on an exam question), and to create events that mirror real-world learning scenarios (i.e., “Cataclysmic-Gertrude!” Gertrude, an evil teacher-hag, torments the students so that four random players must answer a general knowledge question to gain experience or lose health). Students can also be punished or rewarded by a “grim reaper” if they fail an activity by being given detention or less time to complete an assignment. K-12 teachers using the interface report that the system helped students improve their executive functioning and pragmatic skills such as motivation, organization, and better partnering and teamwork.

During an exploratory run of *WoW* only one hour of exploratory gameplay increased student vocabulary in my French courses; it also allowed us to have basic conversations about world economies, racial tensions between NPC groups in the game, and career paths. Students with no interest, skill, or time to learn virtual gameplay were still engaged in this activity precisely because it allowed for anonymous and multiple virtual identities, control over the entry and exit points of their language knowledge base, and ability to terminate or reset a game with no trace of the previous game extant. Through play, learning the foreign language became voluntary, outside the mundane, satisfying, and ingestible (Peterson, 2013). Nevertheless, how might faculty introduce games—particularly those that include a large narrative and long learning curve—in the realm of the learning management system, in formative assessment, and in a language pedagogy or rubric?

5. Transformed Practice: Second Road Education, H.A.S.T.E., and Personal and Self-Regulated Learning Environments—Connecting with other Disciplines and Professions Through Online Courses

Transformed practice evolves when “students transform existing meanings to design new meanings” (New London Group, 1996). Amidst the frenzy of student-

centered, student-driven, and student-designed pedagogies, a host of learning environment buzzwords arose: second road education, personal learning environments, and self-regulated learning environments. Sir Ken Robinson's "divergent thinking" TED talk iterated what many educators observed for decades: a standardized model that groups children by age creates a homogenous, limited knowledge economy. New initiatives including iEARN, TENCompetence and ROLE reimagine the learning environment by proposing nontraditional, nonformal (or informal) learning. I designed H.A.S.T.E. (Holistic Assessment Through Student-Teacher Exchange) as a modest antidote to symptoms and side effects in standardized education, and will describe the impact to students in two semesters of my French courses.

iEARN and TENCompetence steer away from first road (traditional) education because it limits achievement, eliminates the opportunity for a second chance, and does not offer support or training for changing knowledge requirements, jobs and tests after postsecondary education (TENCompetence, 2013). In a foreign language classroom, this equates with the progression through a series according to ACTFL criteria or the textbook industry's assessments and rubrics. Student fluency after a 2-year standardized foreign language course does not equate with real-world fluency; NGOs like iEARN (International Education and Resource Network) have embraced a "learning with the world, not just about it" motto, in which curriculum is designed and facilitated by the teachers and students to connect with other classrooms around the world as a global cohort. Using second road pedagogy, assessment of language fluency would be based on active learning and ability to assimilate within the cohort's project and would empower students to learn language as a *transcompetency*; in other words, students combine language learning with competencies in STEM, writing, or spatial knowledge to achieve positive results for the cohort's project.

ROLE (Responsible Open Learning Environments) comprises 16 research groups from the European Union and China; the project promotes self-regulated learning that "creates responsible and thinking learners that are able to plan their learning process, search for resources independently, learn and then reflect on their learning process and progress" (ROLE, 2011). Using self-regulated pedagogy, individuals identify and control their own learning goals rather than have a curriculum imposed upon them; they are self-motivated and accountable to customize and reflect upon their learning. In the foreign language classroom, educators can promote a degree of self-regulated learning by (a) creating their own textbooks, (b) encouraging students to identify and explore use cases for the language in their academic and career paths, and (c) engaging and assessing the student holistically, both in terms of language proficiency and as transcompetency for other courses, personal development, and career path.

Segregation from literature scholars and linguists is a visible albatross that many of my foreign language and composition colleagues wear. But, how many scholars have nominated language as the primary characteristic of a person's identity? Without language, we cannot communicate. More significantly—without communication we cannot learn and therefore cannot do. In order to register

the necessity of viewing a student as a “whole” learner who must acquire transcompetencies, I have proposed a transdisciplinary, holistic, interactive assessment practice. H.A.S.T.E. will work as a collective assessment platform through which:

1. Class-specific feedback is recorded and made visible to the entire collective. The feedback might focus on domain-specific knowledge, issues with research, presentation, plagiarism, interpersonal skills, and transcompetencies. The system will then gather the input and identify the most common skill(s) that require work (or alternatively, perhaps create a list of competencies that faculty will select, to ensure that correlations are discovered).
2. The faculty and student try to look at the “broader picture” to determine how the challenge skill(s) could be improved through an interdisciplinary project. The project is then custom designed as a team, and a new rubric developed to evaluate that project. The project will replace an assessment of equal value across each of the courses.
3. The group will evaluate students’ progress pre- and postassessment, and make suggestions to continue working on the transcompetency in future coursework and in their career path.

Rather than focus exclusively on formative, microfeedback in a single assignment or single course or discipline, HASTE encourages faculty to devote more time to assessing broader skillsets, or *transcompetencies*. As several studies show, holistic feedback is more important than formative feedback for building the foundational elements of lifelong learning: self-direction, self-monitoring, self-regulation, and self-motivation. When instructors invite communication with students, they are promoting these elements, and enabling students to “participate in deciphering the goals, objectives and feedback” (Nicol & MacFarlane-Dick, 2006). When feedback moves beyond content competency or domain-specific knowledge to focus instead on transcompetencies, students are better able to adapt their knowledge in different contexts (education, work) and roles (student, peer reviewer, leader) (Wilde, Mödritscher, & Sigurdson, 2011).

Imagine a scenario in which Janine, a freshman Comparative Literature major, is enrolled in German Literature, Physics 101, Calculus, French II, and World History. Janine excels in foreign language writing and speaking, but, in college, will now begin to master the skill of conducting intensive academic research for her papers; she generally earns As in foreign language courses with little effort required. However, Janine struggles in her German Literature course: she can no longer earn As with an articulate vocabulary or intuitive reflection of the literature; the professor notes that Janine’s research is too broad, and she does not posit a logical thesis that discerns patterns through a close reading of the texts. Janine is also struggling in her math and sciences courses in spite of tutoring and devoting a large number of hours to studying and completing assignments. Traditionally, Janine’s challenges in these courses are blamed on not knowing how to do advanced research, not understanding the teacher, not seeing the value of STEM for her career goals, and not knowing where to find a good support system beyond a paid tutor. The formative feedback provided in her STEM courses indicates that

Janine is missing points because she is making sloppy errors but does not indicate how to prevent these errors. If the professors offered holistic feedback (holistic both within the course AND as a transdisciplinary team), Janine and the faculty would (together) identify the underlying competency challenge: Janine struggles with Logical-Mathematical intelligence—to think conceptually, abstractly, and to be able to see and explore patterns and relationships (whether in mathematical formulas or in German texts). Whether she becomes a World Literature Professor, a CEO for a foreign company, or a Nobel Laureate in literature, Janine will need to master logical-mathematical skills for project management, leadership, and going deep into new and unique topics.

Now imagine a possible intervention for Janine's situation. Through a student-teacher platform, the faculty collective will provide course-specific feedback that is combined and made visible to all faculty and Janine in a single place. This will lead to a holistic assessment of Janine's skills; together, the faculty and Janine will discern that Janine could benefit from a customized assignment that will focus on logical-mathematical skills and also meet the content criteria for her five courses:

Identify and explore language patterns in three German Enlightenment texts that examine the physical sciences. Present these patterns in a three-page paper that incorporates data visualization. Finally, use Weka to identify the percentage of other plays that will contain these same patterns.

Janine is relieved to invest all of her energy into one high-stakes assignment that will be assessed in all of her courses with a rubric that focuses on logical-mathematical competency. She will not need to dilute her efforts to complete four different assignments that focus on different learning intelligences. She is thrilled that her professors are committed to helping her improve a skill that is integral to her success in advanced coursework and her future profession rather than have her complete yet another long paper on which she will inevitably score well but learn little beyond the domain-specific content. Career success will be largely dependent on her ability to identify patterns and communicate those patterns logically and clearly with her team. At the semester's end, Janine and her faculty members revisit the holistic feedback to discuss progress between the initial evaluation and the end-of-term, customized, transcompetent project. All faculty finish the term satisfied that she has mastered domain-specific content and, more importantly, that she has improved a real-world skill that will contribute to her success. Janine is motivated to continue identifying patterns and making logical arguments on her own; she now reads and writes in her foreign literature courses with newfound passion and interdisciplinary focus, sees value in careful research and close reading, and is better able to monitor her performance in courses that will require logical-mathematical intelligence.

6. Conclusion

As educators, our biggest challenge remains to recognize the evolution in students' lifestyles, learning practices, and goals; these changes are culturally specific on macro- (national, institutional) and micro- (disciplinary, personal) levels.

Current trends point to a generation of learners that values ephemerality, casting a learning net that is far and wide, and disseminating rather than collecting information in an anonymous and editable fashion.

Do we honor the current cultural and identity-forming practices in the distance foreign language classroom, or do we promote formal structure, origin country language learning, and materials designed for the traditional nineteen-year old college student in the four-year brick-and-mortar college curriculum? Do we disperse language across a holistic curriculum, or do we segregate and divide disciplines and then evaluate students on granular and microlevels within each discipline to the determine of a whole learner? If we are willing to experiment with radical forms of technology like self-destructing and anonymous messaging services or game applications, how do we respect students' personal use of these technologies, teach them to use the tools safely in the learning environment, and ensure that the learning outcomes can be achieved? These are the most difficult questions for today's distance language facilitators. It is a time when (to mash-up Goethe and hip-hop fusionist Tricky) distance learning environments should function as a liquid architecture—a thawing incubator in which students can immerse themselves in knowledge through a fluid environment, and emerge with living and adaptable skills that will serve across the disciplines, their professional lives, and their personal interactions.

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Chapter 3

English Language Teaching Apps: Reconceptualizing Learners, Parents and Teachers

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Summary

iPads and other tablets are frequently marketed as learning tools, and many learning applications (apps) target children as young as six months old. The mobility, flexibility, and relative low cost of tablets means that they make ideal classroom learning companions. At home, tablets are also fast becoming essential items for both leisure and educational consumption, thus they are blurring the boundaries between the two areas. This chapter reports on a research project examining the learning features of English learning apps based on the analysis of 124 app descriptions. While the ethos of digital-mediated learning is based on interaction, connection, and collaboration, the findings suggest learning apps promoted something different. Positioning Theory is used to show how app developers position themselves, parents, teachers, and learners in the global discourse on technology and English teaching and learning. The popular use of these English learning apps may pose long term impacts on the future of English teaching and MALL.

1. Introduction

With ever-increasing numbers of people learning English as a second or foreign language (Copland & Garton, 2014), the ages of the learners are also falling (Pinter, 2011). At the same time that parents are seeking English language education for their children in formal contexts, they are also looking for English learning opportunities in home contexts (Chik, 2014; Murphy, 2014). Augmenting this expansion is the availability of cheaper and multifunctional tablet computers, which have revolutionized informal mobile assisted language learning (MALL) (Godwin-Jones, 2011; Hockly, 2013). In particular, the introduction of Apple's iPad in 2010 was branded as the new platform for mobile learning in both formal and informal environments. Though the market share of iPad has shrunk since its introduction in 2010, it is still the market leader of tablet computers with a 27.5% global market share (Lunden, 2014). Unlike other tablet developers, Apple has marketed the iPad as a learning device and partner since its introduction. While the more recent models come with free applications like Pages, Numbers,

and Keynote, iPads cannot be a learning tool without the support of software applications ('apps' for short). Since 2010, about 1.2 million iOS apps have been developed with 75 billion apps downloaded (Perez, 2014), a significant portion of which have been labeled educational. When apps are marketed as available and accessible learning resources, they are attractive to techno-minded teachers and parents around the world. There are probably more learners of English as a foreign language (EFL)¹ using these apps in formal or informal learning contexts than native English-speaking learners (Bolton & Graddol, 2012; Crystal, 2008). Among the rising number of EFL learners, the portion of young learners is also on the rise (Copeland & Garton, 2014). As advertised on the Apple App Store, 'Language Development' education apps are designed to enhance the reading, writing, speaking and vocabulary building skills of English as a Second Language (ESL) learners (Apple, 2013). This advertising tagline shows a corporate awareness of the dramatic rise in the number of English language learners around the world. However, English apps are not designed by Apple. In this chapter, we focus on English learning apps that target young learners, their features, and, by extension, the discourse of EFL learning for young learners in the digital age.

2. Young ESL and EFL Learners and Mobile Learning

Parents' intuitive beliefs that children have a natural flair for foreign language learning have fuelled a strong demand for an earlier start in EFL learning (Cameron, 2003; Pinter, 2011). In theories of child development, it is generally accepted that second language (L2) learning happens in contexts and through interactions with others (see Pinter 2011 for a detailed discussion). Based on published studies on young EFL learners, Cameron (2001) argues that vocabulary acquisition and discourse ability acquired from social interaction are the building blocks for L2 language development. The acquisition of lexical items is essential because it helps young learners to anchor and label abstract concepts to connect inner and physical worlds. However, the acquisition of vocabulary alone does not provide the basis for meaningful communication or language development. The development of discourse ability, arising from social interaction with adults and peers, provides the basis for grammar learning which enables meaningful communication.

While everyday technology at home is spearheading the latest trends in learning, the research on home contexts is limited (Giacquinta, Bauer, & Levin, 1993; Plowman, Stevenson, Stephen, & McPake, 2012). Burnett (2010, p. 254) suggests that research on the roles of technology within first language literacy in both school and home contexts can be organized in three strands:

- technology as deliverer of literacy,
- technology as site for interaction around texts, and
- technology as medium for meaning-making.

By the same token, we can use these three strands for evaluating claims made by app developers. Because technology is part of our daily landscape, there is a call to integrate technology into language teacher education; however, there

is no equivalent option for parents (Dudeney & Hockly, 2012; Goodwyn, 2013; O'Hara, 2011). In fact, we have only limited knowledge of the foreign language learning practices at home. Yet, published studies have shown that younger learners have greater access and freedom to experiment with technology at home than they are able to or allowed to in school (O'Mara & Laidlaw, 2011).

EFL learning materials should be evaluated thoroughly before being used with learners. In formal learning contexts, education bureaus, schools, and teachers frequently act as the gatekeepers to provide some measure of quality control, so parents can put their trust in choices and recommendations made by these educational experts (Cameron, 2001). In material evaluation, Littlejohn (2011) suggests three evaluative domains: the process of learning (how), the participation (with whom), and content (about what). For traditional print learning material evaluation, the first step is the examination of the author's claims (Pinter, 2006). The same vigorous procedures should be applied to English learning apps if they are to be used as learning materials. Kim and Kwon's (2012) study of 87 ESL learning apps shows that the teaching approach in these apps remains form-focused because most apps only utilize wordlists and grammatical items, which require cognitive learning styles but do not provide interactive social learning opportunity. Using EFL learning apps is still a relatively new phenomenon, and only very limited published research is available on the holistic evaluation of EFL apps as learning materials. Because there are no author's claims in apps, it is possible to examine the app developer's description instead, which is a required piece of information on the Apple App Store and Google Play.

However, in home contexts, the evaluation of apps appears to be more challenging for parents with no formal training in language education or material evaluation. Instead of being informed by academic research, many parents rely on online or media reviews (Missio, 2014). As the choice of apps is growing more quickly than available reviews, finding the appropriate learning apps for their children can be a daunting task for parents. When choosing apps, parents are usually left to their own devices through trial and error or get advice from family, friends, or the media. Parents are also more likely to download 'free' apps to test with their children before committing to paying for an app. Consequently, many parents may only evaluate apps through the product descriptions supplied by the app developers before using them with children. When parents read the product description of an app, they are generally introduced to something more than a product description. The product description is also the way in which app developers project their conception of technology and EFL learning to the public, thus joining and, in turn, directing the public discourse on the topic.

3. Positioning Theory and Discourses on English Language Learning

One way to examine public discourse on foreign language learning is by using Positioning Theory, which was first developed to examine selfhood in psychology (Davies & Harré, 1990). Positioning can be understood as "the discursive construction of personal stories that make a person's actions intelligible and rela-

tively determinate as social acts and within which the members of the conversation have specific locations" (Harré & van Langenhove, 1991, p. 395). The application of Positioning Theory demonstrates that in conversation, people position themselves, position others, or are positioned to take up different roles to develop, unfold, or maintain a story line. A story line can be understood as a narrative that unfolds, develops, and is supported or questioned during the conversation. Harré and van Langenhove suggest the use of 'positions' rather than 'roles' to understand discursive practices because positions are constantly being negotiated in social interaction. Thus, every act of self- or other-positioning in a conversation will determine the development of a story line. Since a story line is anchored in conversation, it can also be understood as embedded in social and cultural conventions. In addition to the notion of the story line, Harré and van Langenhove introduced various modes of positioning: initiating self and other positioning (self- and other-positioning), using existing social categories and story lines (first- and second-order positioning), initiating deliberate act of positioning self and others and the subsequent counter responses (performative and accountive positioning), and using institutional structures over personal attributes (moral and personal positioning) and intentionality (tacit and intentional positioning).

In recent years, Positioning Theory has been applied in areas beyond interaction during conversation and extended to positioning in textual interaction for understanding global issues and conflicts at institutional and national levels. In discussing technology assessment, van Langenhove and Bertolink (1999) extended the notion of conversation beyond verbal exchanges to include written artifacts. The same approach can be applied to understand the discursive construction of learning, learning partners, and learners in app descriptions.

4. The Study

The current study is part of a larger project examining English language learning apps designed for young learners. In this chapter, I will draw on data related to the product descriptions provided by 124 English language learning apps downloaded from the Apple App Store, the exclusive online store for downloading Apple iPad compatible apps. Most of the apps analyzed in this study are available in both iOS and Android operating systems, but iOS-operated apps are selected for easy access of app description through the Apple App Store. It is recalled that iPad is the current market leader of tablet computers (27.5% global share), which provides another reason for choosing iOS apps for this study. Access to apps on App Store is country or region specific, so the search results represent the apps available from the Hong Kong App Store between May 25, 2013 and June 1, 2014. With more than 1.2 million apps on App Store (Perez, 2014), a keyword search ('English', 'learning', and 'children') was conducted to narrow down relevant app choices. This search yielded more than 1,000 apps, and three selection criteria were then used to compile the data set.

First, based on the consumer's principle of 'try before you buy,' only apps that are freely available for initial download and use are included. It should be not-

ed that some of these ‘free’ apps include in-app purchases. App developers are required to provide the information in the following sections to consumers on iTunes and App Store:

- App Store text and images,
- Categories (e.g., Education, Business, Entertainment),
- Rating (age related, e.g., 4+ for no objectionable material),
- Description,
- What’s New in this Version,
- Keywords, and
- Support URL.

While all these sections provide production information, the analytical focus for this chapter is the “App Description” section. In the “App Description” section, developers are encouraged to “write a clear, concise, and informative app description” that focuses on functionality, design, and unique features (Apple, 2013). Developers are also given advice on writing better descriptions such as customizing information for local markets, using bullet points for efficient presentation, and minimizing user reviews and testimonials. The Description is a mandatory field that developers have to fill in with a maximum length of 4,000 bytes (around 4,000 characters).

Second, in response to Cameron’s (2001) suggestion that young foreign language learners should acquire vocabulary and discourse ability to further their language development, the second app selection criterion was vocabulary learning. In this study, a vocabulary learning app is broadly defined as an app that emphasizes vocabulary acquisition and learning, as opposed to apps that teach phonics and nursery rhymes. A typical vocabulary learning app may include word recognition, flashcard, spelling, and puzzle solving. Given the two selection criteria, free access and vocabulary learning, a total of 124 apps labeled “free,” “education,” and “Rated 4+” were selected. Every effort was made to avoid including apps developed by the same developer, but this effort was limited by the available information on App Store.

The third selection criterion involved the exclusion of apps developed by international language test providers because some international language test providers have also designed apps which solely focus on test preparation. One prime example is the series of vocabulary and language learning apps developed by Cambridge English, which targets test takers of the Cambridge Young Learners’ English Tests series and their parents. These specific-purpose apps are linked to specific learning events and are thus excluded from the database. Likewise, vocabulary and test preparation apps developed by third parties are also excluded.

The length of Description for individual app varies from a 1-line sentence to a full-page detailed description. All app descriptions were downloaded to create a small corpus of 30,952 words for analysis. A basic concordancing program and manual coding of selected features were used to analyze the data. The author started with an automated search for lexical items related to learning (e.g., educate, education; learn, learning; teach, teaching), or pronouns (e.g., you, your). The

author and a research assistant conducted manual coding independently on lexical items and claims related to the process of learning, the learning partners, and the content. The interrater reliability was close to 90%, and discrepancy in coding was discussed and resolved. In the following sections, claims made by developers will be examined to establish the process of learning (how), participation (with whom), and content (about what) (Littlejohn, 2011). Verbatim excerpts from the Description section are quoted to demonstrate positioning of relevant parties in action.

5. Findings

The app is an interactive iPad game designed to effortlessly teach English to children between the ages of 1 and 4. (#23)

Statements like the one above are commonly found in the app descriptions. Claims made by app producers promise exciting potentials for both parents and young learners. There are probably more EFL speakers than native English speakers learning English (Crystal, 2008), but most app developers do not take EFL learners into consideration at all. In the dataset of 124 apps, only 13 (10.5%) mentioned ESL or EFL learners. However, the apps that mentioned EFL learners use phrases like “*also great for non-english speaking kids*” (#103, emphasis added), indicating that nonnative English speaking learners are not the targeted learners of these apps. Only 5 apps claimed to have been specifically designed for ESL or EFL learners. That said, most of the vocabulary learning apps were designed to help young learners to acquire simple lexical items like numbers, colors, animals, family, household items, and other objects.

5.1 Learning is “an endless buffet of educational fun”

Praising a particular app as “an endless buffet of educational fun” in an online review seems like an exaggeration, but the statement succinctly sums up the main design concept behind many of the learning apps. Pinter (2011) advocates that play and games should be treated as an important component in the curriculum and classroom for young EFL learners. Many of the app designers apparently have taken up this concept. While 18 out of 124 of the apps emphasize the ‘educational’ value of their apps (104 times), they also sweeten the educational values with ‘fun,’ ‘game,’ and ‘play:’

With this fun game for small children you can support their learning process by teaching them that exploring and learning is fun! These games are based on educational and pedagogical principles and are perfect to learn spelling. Different types of exercises yield a lot of fun for your children. (#92)

In this claim, parents are presumed to be satisfied knowing that the learning principles are the two vague synonyms “educational” and “pedagogical” because having “fun” is more important. In the corpus, the three most frequently used lexical items were: game (389 times), fun (267 times), and the derivatives of ‘play’ (‘play,’ ‘playful,’ and ‘playing;’ 196 times):

This Flash Cards English is an amazing Educational app packed full with Words, Pictures and Narration. A great and fun way for your child to Learn new words. (#91)

Though play is pedagogically important, app developers strategically have highlighted these aspects to attract parental attention. This finding concurs with Nunan's (2013) report of a case of educational software development in which developers had to emphasize the fun elements over pedagogical purposes to please and attract the younger learners. Another aspect that has been magnified by app developers is that learning can be quickly achieved: "It's amazing how fast they can learn numbers and counting with this app" (#103).

A total of 25 out of 124 apps suggested that they will help learners to acquire vocabulary quickly: "Repeat each exercise until you write it perfectly. You will be surprised how fast you will learn" (#53). The main pedagogical principle used by many apps is repetition and drilling, which represents a less desirable characteristic of MALL (Burston, 2014a). To put a new twist on attracting young learners to use the app repeatedly, game design and gaming principles are adopted (39/124): "With 5 difficult levels to choose from, this educational game will never get old!" (#89).

Game design and gaming principles include levels of difficulty, timed play, reward for correct answers, game feedback for incorrect answers, clearing of levels, scoreboards, and collection of game artifacts (e.g., stickers, stars, and trophies). In conjunction with the gaming principles is the over-emphasis of getting the 'correct' answers (76 out of 124) through various reward systems. From a simple star system ("Earn rewards through a star system which maximizes motivation," #117) to interaction with a cartoon character ("Feed the monster the wrong item and he might get sick. But don't worry; you'll have the chance to try the question again later in the game," #18). Of course, the reward system is not necessarily designed for young learners, it can also be designed as a monitoring system for parents:

With every correct answer, the number of cookies in the child's jar will increase. You will see how your children enjoy scattering their cookies all over the screen and how they are moved to keep playing and learning in order to get more cookies. (#122)

On the App Store webpage, developers usually provide snapshots of their apps in action. All snapshots show colorful pictures or characters, but 25 apps do not mention any visual or audio components. One strong feature of digital learning experience for young learners is the use of multisensory devices (Pahl & Rowsell, 2005; Mangen, 2010), so it is strange that the apps do not mention these components. In addition, only 17 apps explicitly mentioned the use of songs, and 16 the use of background music. Altogether 25 apps mentioned animation as a main feature, only 11 apps mentioned the use of sound effects in their descriptions. This certainly does not mean that audio components are absent, but it appears to suggest that app developers do not necessarily view these multimodal components as contributing to the learning experience.

5.2 Young Learners are “Independent” Learners

All apps examined in this study are rated 4+, similar to universal viewing in film rating, meaning that the apps contain no objectionable content. At the same time, 4+ also seems to suggest that the apps are suitable for users as young as four years old. Though one app claims that the app can be used by “youngest iPhone & iPad users” (#56), half of the apps do not disclose the age range of targeted users (64 out of 124). Among the 124 apps, the youngest targeted users are six months old (15 out of 124). Even when slightly older users are suggested, toddler (16 out of 124) and preschooler (16 out of 124) users are more frequently mentioned than primary school children (6 out of 124). Whether the targeted users are toddlers or preschoolers, not to mention six-month-old babies, it can be said that these are extremely young ages for EFL learning (Pinter, 2011). Cameron (2001) advocates meaningful social interaction as instrumental for young learners to build up their discursive competence. Yet, a number of apps suggest “us[ing] it to keep your baby or toddler occupied” (#107), implying that the app can free parents up for household chores or other activities (“while you are in the supermarket,” #39). Among the apps surveyed here, less than half (44 out of 124) explicitly mention the involvement of parents. While research on young EFL learners suggests that meaningful social interaction, such as parents or adults reading together with children or children working in groups in the classroom, is necessary for linguistic development, app developers apparently do not agree. In the absence of parental involvement, statements like “Easy for kids to use by themselves” (#89) and “fun alone or with Mom and Dad” (#89) best captured the use of apps and mobile devices in everyday life: the presence of adults or parents is optional.

When parents or adults are included in the narratives of the learning process, they are frequently positioned into certain roles that they may or may not have welcomed. Statements such as “The first ‘mission’ is FREE for you to try this game with your child” (#5) and “This simple, easy-to-use game can be enjoyed by children and their parents as they play along” (#18) indicate an expectation of parent-child co-activities. In other instances, parents are expected to provide guidance and mentorship, “once a parent teaches the child how to play, the child can spend hours with this app—learning and enjoying at the same time” (#29), and “parents can turn the voiceover off while sitting with a child or turn the voice over on to give a child the opportunity to self learn” (#72). Parents are also expected to join in producing and individualizing the learning materials, “Make DIY words, record the pronunciation with your own voice and associate the words with your favourite photos” (#113). Other than parents, only one app (#83) mentioned ‘family,’ and none of the apps suggested co-learning or co-playing with siblings or other children. There is a sense that each child will have her own personal device and that it is not to be shared.

While parents or adults are not included in all app descriptions, more apps encourage, or even expect, young learners to learn on their own. App developers use descriptions like “accompanied by a friendly voice guidance, children are encouraged to play and learn at their own pace” (#3) and “navigation is easy and intui-

tive, so kids can get the hang of it all by themselves” (#47) to suggest that it is easy to operate their apps. With these directives young learners are almost expected to operate the apps and devices on their own. It is improbable, but even learners as young as six months old are described as ‘independent’ learners in these apps. Though young learners may be encouraged to operate the apps on their own, app developers go further and suggest using the mobile devices and apps for babysitting purposes (10 out of 124). First, statements like “Our 4-in-1 pair matching/memory app is really easy-to-use, so your little ones will remain occupied for hours!” (#121) assure that the young learners would be busy so “when your child held this app, you can rest and relax” (#22) and that “no help required, kids will go through the activities with ease, whether in the back seat of the car or sitting in the shopping trolley!” (#35).

5.3 The Content is “devised by experts”

Our 10-month old daughter loves this app. by Progressive parent (#23)

Testimonials similar to the statement above are commonly used in sales pitches. Though it may appear that a testimonial from a ‘progressive parent’ on his/her 10-month old daughter’s reaction cannot be substantiated as ‘expert’ opinion, advertising testimonials by parent-users are among the most popular tactics for app developers to offer proof of their credibility. One of the main reasons for using testimonials is that among the 124 learning apps discussed in this chapter, only four apps are published by recognizable publishers or developers. These four companies either provide offline language learning classes or operate online language learning platforms for adults. In the view that most apps are developed by small and unknown publishers, new sales strategies are devised to establish expertise.

When evaluating traditional print materials, established publishers and authors pose advantages to parents and teachers. However, the placement of trust is more difficult with free apps because most are released by small and relatively unknown developers. Without the backing of familiar brands, app developers still need to position themselves as credible experts to app users. About half of the app developers (59 out of 124) primarily use the description to establish credibility in language learning material development. One of the strategies used by app developers associates the app with traditional sources of authority: educators, ministries of education, and international language tests. Anonymous teams of in-house ‘experts’ and ‘language educators’ provide the credibility to the learning content (11 out of 124), and unnamed ministries of education endorse the apps (2 out of 124). However, one app cited its use in British primary schools but specified no other educational bureau.

Other than ‘experts’ in the shadows, the more popular tactic for app developers to establish expertise is to include excerpts of user or media reviews (15 out of 124). The excerpt in the beginning of this section is one such example. The following example is slightly more unusual because it portrayed the development of a child:

My 3 year old son adores this app.

Out of all my apps, he comes to this one time and again, and i find it to be one of the best kids apps He started playing this app when he was 2 1/2 I can see him still playing this app at 5. It has lots of room for a child to grow into. (#92)

This review is very different from the here-and-now mentality reflected in many of the online testimonials. Most testimonials are taken from online review sources like TechCrunch.com, theiPhoneMom.com, and iHeartThisApp.com. Some app developers (10 out of 124) also use the number of downloads, “Over 1 million download, this can’t be wrong” (#4) or the ranking on App Store chart, “Top 200 educational iPad app in over 60 countries” (#32) as proof of expertise and credibility.

Perhaps the most intriguing strategy to establish language teaching expertise is the utilization of identity categories (13 out of 124). The identity categories most freely used are those of parents and app developers. A parent who developed the app “for my toddler and she ABSOLUTELY LOVES IT!!” (#56) or a developer who also ran an “in-home daycare” (#42) are deemed as sources of language teaching expertise. It is as though ‘parents’ can be switched. The concept that parenthood is naturally a credential validates other claims like “the app is tested by kids and toddlers” (#88) and “[w]e designed this app with our own children who gave us essential (and sometimes quite critical!) feedback. They love the final app though and we hope your kids will love it too :)” (#58). Of course parents knew best because

Out from the frustration of searching the perfect app for their children, two fathers from two families come together and spawn magic, creating something incredibly fun and practical; helping their kids to learn the English alphabet miraculously enjoyable and with ease. (#122)

Being a member of “MomsWithApps, a collaborative group of family-friendly developers seeking to promote quality apps for kids and families” (#3) also appeared to project language teaching expertise.

6. Discussion

When evaluating the claims made in the Description section of an app, it is not difficult to see various discursive practices in action. The Description section is a public platform for app developers to communicate their ideas and concepts to potential users of their materials. Thus, they make various claims to position themselves and their apps as learning experts and partners, while at the same time other-position the parents and young learners as dependent on their expertise (Davies & Harré, 1990). As mentioned earlier, parents enter a ‘conversation’ with the app developer when they read an app description to decide whether to download and use the app (van Langenhove & Bertolink, 1999). In this conversation, only one party has the voice—the app developer. App developers have the space and voice to convey their conceptions and vision of technology and EFL learning.

When parents read and like what they read, they are more likely to download and use the apps with their children. By using the apps, parents implicitly accept the positions prescribed in the description and by the app developers.

First, by estimation, EFL learners outnumber native English-speaking learners, which translates into having more parents of EFL learners than parents of native English speaking learners contemplating, downloading, and using English learning apps. One profound characteristic that the 124 surveyed apps share is the blurring of first language literacy and EFL pedagogy; only 5 apps are specifically designed for EFL learners. Even the 13 apps that mention ESL and EFL learners suggest that their apps are *also* suitable for ESL or EFL learning, which essentially shows that the apps are originally designed for first language users. Suitability for ESL or EFL learning is perhaps an afterthought. So the first order positioning maneuvered by app developers is for parents to believe and accept the story line that there is no difference in first language and ESL/EFL learning, especially for young learners. When young EFL learners use the apps, they could learn to speak, just like other young native English speakers who might also be using the same apps. Parents of EFL learners should be aware of the differences in first language acquisition and EFL learning. When EFL learners are not in supportive bilingual immersion, specially designed EFL materials are essential for healthy language development (Pinter, 2011).

Second, when parents download and use the apps, they are being other-positioned to accept the underpinning pedagogical principles of them. The findings suggest that though app developers mainly package EFL learning as a ‘fun’ and ‘fast’ process, yet the ‘fun’ is achieved through completing repetitive and drilling exercises (Kim & Kwon, 2012). While parents or teachers might have a more constructivist or sociocultural view towards learning, most learning apps appear to adopt a more behaviorist approach. Unfortunately, a behaviorist approach to app design in MALL is viewed as one of the current limitations (Burston, 2014b). At the same time, the emphasis on ease and quickness of learning might also perpetuate another myth that children will *just* learn a foreign language, even without appropriate pedagogical support. This other-positioning complements the first order positioning that there is no difference between first language and ESL/EFL learning. The use of repetitive drilling exercises shows developers as not being sensitive to changes and advancements in EFL pedagogies in the past two decades, which have called for learner-centered, communicative, and autonomous learning.

In addition, parents are positioned to believe, or accept the possibility, that 6-month-old babies are capable of EFL learning on their own with only the assistance of an app. Regardless of the validity of concerns about children’s use of mobile devices, social interaction with adults and peers is the foundation for children’s linguistic development (Cameron, 2001; Ghosn, 2013). Yet, in the instances of the claims made by the 124 surveyed apps, parents are positioned to accept that learning with technology is mostly an individual experience since developers make claims that learners only require the apps to learn and no one else. When many of these app users are of very young age, their English learning experiences

with technology might be the earliest EFL learning experiences they have. The use of repetition and drilling might fossilize early learning experiences into learning preferences. Meanwhile, parents are not necessarily other-positioned as mentors and partners in learning but as parents who use technology for babysitting. When app developers utilize the call that parents are tired and need breaks, they are also shaming parents into using technology as a ‘productive’ way to create spaces for personal relaxation, or the ‘pass-back effect’, in which parents simply pass their devices to young children (Goodwin & Highfield, 2012).

Finally, the traditional notion of expertise in language teaching and learning is being disrupted by claims made in app descriptions. At institutional and national levels, it can be said that professional training from formal educational institutes constitutes expertise in foreign language teaching. When parents place their children in language classrooms, they place their trust in teachers’ expertise to help their children develop their linguistic abilities. However, expertise is being constructed differently in apps when app developers use identity categories, number of downloads, or testimonials as evidence of expertise. These claims of expertise essentially use moral positioning at institutional level to reconceptualize and reimagine foreign language teaching expertise in the public discourse. The quality of content in these apps varies and some might even be questionable, thus the shifting construction of expertise will make it even more difficult for parents to screen for suitable apps.

7. Conclusions

As tablets and apps have gained popularity as learning tools, this study examined the product description of 124 English learning apps. All 124 apps are free for download and use and are labeled as educational with no objectionable content. As tablet computers are fast becoming essentials in many households, parents are also using them for additional learning opportunities at home. Nowadays, free apps are accessible and disposable resources and are certainly attractive alternatives to expensive EFL software. The present study showed that while apps might be convenient learning tools, they are not necessarily effective learning partners because only a minority of the apps promote social interaction. Like Burnett’s (2010) study on technology and literacy, this study found that apps packaged themselves as “deliverer of literacy” but promised no “interaction around texts” or “meaning making”.

Since our knowledge of technological practices at home is still limited, the study points to some interesting pedagogical and research implications for MALL. First, claims made in recent learning apps appear to suggest that learning is an independent and autonomous, if not a solitary, act between a young learner and the app content. This conception is a false advertising of autonomous learning because the young learners are not taking control of their own learning; they are merely following drilling exercise instructions (Holec, 1981). In addition, this conception goes against the basic premise that MALL enables learners to communicate with others at any time and from anywhere and hence facilitates collaborative learning. Literacy learning happens in communities, in relation to broader sociocultural

processes, not in isolation (Hamilton, 2006). Parents might be disappointed with their children learning only vocabulary at best and not acquiring any real language enhancement. Thus, it is even more urgent to prioritize meaningful interaction in EFL classes when it is safe to assume that parents might supplement formal learning with wordlist learning at home. Second, when most learning apps are developed by unknown publishers who may not have any authentic expertise in EFL and MALL learning design, it becomes more important that educators must step up to forge a stronger bridge between formal and informal learning. If parents begin to view learning apps not just as supplementary, but as substitutive, to formal learning, young learners' learning might suffer from misguided pedagogy. Thus, it is even more important that research on MALL be accessible and made available to the general public. Finally, the claims made by app developers can essentially be viewed as a thread of the larger public discourse on technology and EFL learning. It is important to examine this public discourse to identify what is claimed to be possible and how these claims are aligned with pedagogical principles, or as Thomas and Peterson (2014) view the situation, rhetoric versus reality with foreign language learning in MALL. As the study found, most app developers tend to conceive EFL learning as solitary and rote learning, which could be the result of current technology configuration, but it may also point to deep-rooted belief of pedagogies of past eras. Then it is important to reflect whether new technological changes to learning is redressing old ghosts or spearheading genuine pedagogical innovations.

Note

¹. English as a Foreign Language (EFL) is used in this chapter following Pinter's (2011) argument that most young learners are not induced into full bilingual learning. EFL learning is also evidenced with Nunan's (2003) investigation that most Asian students are only taking English as a subject for a few hours a week, rather than being in immersed bilingual learning contexts.

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Chapter 4

Clustering, Collaboration, and Community: Sociality at Work in a cMOOC

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Summary

This chapter addresses a key question in relation to the popularity of massive open online courses (MOOCs) and other forms of collaborative online learning: why it is that learners collaborate with one another at all rather than simply identifying and pursuing their own individual goals? To answer this question, the chapter draws extensively on sociality theory, which predicates that human beings are actually selected for their capacity to feel empathy, show altruism, exercise reciprocity and fairness, as well as for their aptitude for cooperating with others. The evidence to suggest that these traits are to be found in today's online learners is offered in the form of a case study drawn from an 8-week MOOC in open translation practices (the OT12 MOOC) organized by members of the Department of Languages at The Open University, UK, from October to December 2012. Taking as its starting point Cormier's (2010) framework of the five steps to success in a MOOC (orient, declare, network, cluster, focus), we focus on the transition between the stages of networking and clustering. Our study is based on a content analysis of forum postings by participants in the OT12 MOOC.

We begin by detailing the key features of MOOCs, as identified by Cormier (2010), Lane (2012) and others, considering in particular Cormier's account of the network-based connectivist MOOC. Next comes a description of the OT12 MOOC, which falls into this category. This is followed by a brief outline of sociality theory. Finally we present our methodology and data drawn from the OT12 which illustrates the significant role played by human sociality in the formation of online communities, whether their *raison d'être* is volunteer translation or collaborative learning.

1. Introduction

This chapter takes as its starting point Dave Cormier's (2010) YouTube video 'Success in a MOOC' which is on its way to establishing itself as a classic account of how learning can take place successfully in a connectivist MOOC (the so called cMOOC). In that video, Cormier identifies the following 5 steps for learners to follow: Orient, Declare, Network, Cluster, and Focus.

What Cormier means precisely by these five steps will be dealt with in the following section of this chapter. For present purposes, suffice it to say that this contribution concerns itself primarily with the transition from Step 3 to Step 4 (i.e., from networking to clustering). It does so for the following reasons. In his 2014 YouTube video, Cormier has indicated that one of the key questions around the cMOOC relates to its capacity to act as what he has called "a generator for community" (n.p.). Two of the questions he asks in his video, recorded at Harvard University, are as follows: "How do you build community?" and "How do you keep a community running?"

These questions are particularly important to Cormier, whose interest in "rhizomatic learning" has led him to propose the idea of "Community as Curriculum" (Cormier, 2008). Essentially this concept explores how online learning communities create themselves and become self-organizing.

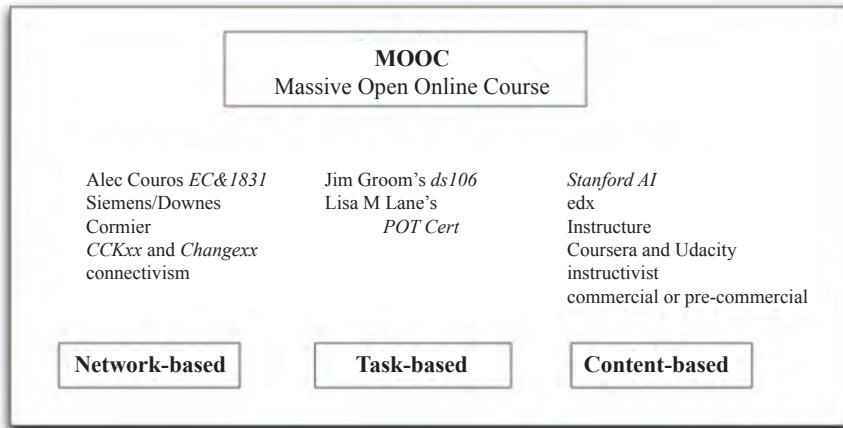
In the rhizomatic model of learning, curriculum is not driven by predefined inputs from experts; it is constructed and negotiated in real time by the contributions of those engaged in the learning process. (n.p.)

Ultimately it is in the ability to sustain itself that success in a MOOC can be found. If learning is to be truly lifelong, then in the phrase borrowed by Cormier from Vanessa Gennarelli, "success is never finishing" (Cormier, 2014).

2. Making Connections: Networking as the Key to Learning

In an effort to overcome the common classification of MOOCs into xMOOCs, which use a traditional instructivist, transmission-based pedagogy (e.g., the courses offered to thousands by EdX, Coursera and FutureLearn), and cMOOCs, based on a connectivist model (Downes, 2012a) and aimed at a much smaller audience, Lane (2012) proposes an alternative taxonomy differentiating between network-based, task-based, and content-based MOOCs (see Figure 1). Taking this approach a step further, we suggest that these three kinds of MOOCs represent distinguishable MOOC types on a continuum of MOOCs where certain characteristic features may be inherent to more than one type. Arguably the latter tends to happen more often at the intersection between network-based and task-based MOOCs rather than in the case of content-based MOOCs.

Figure 1
Three Kinds of MOOCs, from Lane (2012)



The focus of network-based MOOCs (roughly equivalent to cMOOCs) is socially constructed knowledge developed through joint exploration and exchanges that take place through a variety of communication channels and modes. The emphasis in task-based MOOCs, on the other hand, is skills development through the completion of tasks. While success in carrying out those tasks relies upon collaboration, the creation of a community is not a primary goal. The pedagogical approach of these MOOCs tends to locate itself at the interface of constructivism and instructivism. Content-based MOOCs or xMOOCs, however, evolve primarily around content transmission and acquisition and tend to be instructivist in their approach. They mostly rely upon automated assessment, and, while they might also provide opportunities for networking and joint tasks execution, learners can take these courses and also successfully complete them without engaging with any of the other participants.

Focusing on network-based or cMOOCs, Cormier (2010) argues that the journey to success in a MOOC can be broken down into five phases.

2.1 Orient

Once participants have registered for the MOOC—which often requires just a simple mouse click—and have landed on the platform where it is being hosted, they start identifying and bookmarking materials, relevant links, and announcements of the timing of live sessions. Cormier (2010) therefore stresses that “in some ways a MOOC is just like being on the Web” (n.p.). Yet, he also highlights an important distinguishing feature between cMOOCs and the Web: “... with one big exception: a MOOC is paced!” and the fact that the degree to which a learner can engage and participate is proportionate to the amount of material they can cover.

2.2 Declare

In order to move on to the next phase in which participants are expected to declare themselves, they need a place for their thoughts and reflections. This might be a personal blog, a discussion forum that's part of the MOOC, a bulletin board, a voice thread, or any other social media. Cormier (2010) reminds us though, that despite a learners' readiness to share their first impressions, nothing might happen for a while because the individual will need a network to move on to the next phases of a successful learning journey in a MOOC.

2.3 Network

In order to network, the individual learner will need to actively follow other participants and jointly reflect on material and input and thus make connections. To do so they can consider communications they have been getting from the MOOC facilitators or read contributions posted by others in the discussion forums and make a conscious effort to comment on these contributions. As Cormier (2010, n.p.) puts it: "The connections and the comments is what the course is all about!" He even goes a step further and offers very specific, almost recipe-like advice to MOOC novices: "Go back to your spot ... your blog, for example, and write a thoughtful reply to someone's questions or concerns. Tell them that you have done this ... make connections! There will be a discussion going on. A discussion is what you took the course for!"

2.4 Cluster

After some time of reading and commenting in this fashion, participants are likely to realize that there are others whose interest in the MOOC, or at least certain parts of it, is somewhat aligned with theirs. They find themselves returning to those learners' contributions more often and, vice versa, those are also the learners who are commenting on their work more often than other MOOC participants. There are mutual interests and concerns. Hence, Cormier (2010, n.p.) concludes: "You are connecting!"

While it is not important and often impossible to connect with everyone in the MOOC, individual participants are likely to find a cluster of like-minded learners who are focused on what they themselves are most interested in. This is the group of participants they want to be working with and which—in the spirit of the idea that success is never finishing—might develop into a community that will continue to share ideas even after the course is over.

2.5 Focus

However, despite the positive connections and inspiring readings and the learning that results from it, participants might find that over halfway through the course they start getting distracted or lose their sense of direction. Their minds start to wander, as Cormier (2010) describes it, and they might become uncertain about what they were trying to do with the course and what their reasons for taking it

were. In his view, this is a crucial moment in MOOC participants' journey to success as they can draw on their new cluster for support with their plans and maybe start a joint project such as a paper or a grant application, something concrete which they can then use during the remainder of the course to finish or at least progress substantially.

3. From Networks to Communities

Our observations during the OT12 MOOC corroborate Cormier's assertion that the shift from networking to clustering is the key stage in this 5-step process, the point at which learners select another set of learners with whom they can negotiate knowledge and find solutions that will allow them to achieve their goals. "The possibility of supporting the creation of long term clusters," McAuley, Stewart, Siemens & Cormier (2010, n.p.) conclude, "rewards the effort of putting on the event. People meet the people they need to meet. They find the solutions they were hoping to find. They also, hopefully, find a sense of community, which may be reason enough to do it by itself." Further, we would contend that making the transition from networking to clustering involves precisely the kind of behaviors and attitudes which hold the secret to the construction of a self-sustaining online learning community. These are quite clearly spelled out by Claudia Scholz, an educationist from Atlanta, Georgia, who, in her blog 'Lifelong Learner' offers an informative commentary on Cormier's framework.

"To network" Scholz (2012) points out, "you have to seek out and engage with other participants" (n.p.). Effectively, networking is simply about making a connection with someone you may never have met before and of whom you may know nothing at all. If networking is about initiating a relationship, clustering is much more clearly aimed at constructing that relationship in such a way that it is durable. Again, in Scholz's words, "Clustering is about building relationships that will extend beyond the course" (n.p.). This may include abandoning contact with some members of the network: "Clustering, in a sense, means pruning" (n.p.). It also crucially means locating those people who can offer useful information and help with learning and somehow incorporating them into a Personal Learning Network (PLN). As Scholz expresses it, "'Clustering' is another word for building or adding to your *personal learning network*. PLN is a term used by educators to refer to the professional networks, usually within a social media platform such as Twitter, that help them keep up with new tools and developments in their field" (n.p.).

Though neither Cormier nor Scholz make use of the terminology associated with human sociality theory, it is clear to anyone familiar with it that the kinds of behaviors associated with success in cMOOCs are also those which many recent researchers in disciplines as diverse as experimental economics, developmental psychology, and even primatology, see as intrinsic to human nature. This alone may go some way to explaining the phenomenal surge of interest that MOOCs have aroused in the past 5 years. Before providing insights into the tenets of sociality theory as defined by de Waal (2009), the next section offers an outline of OT12 and introduces its participants.

4. The OT12 Open Translation MOOC

The data we shall draw on is provided by the OT12 MOOC. This was an open online course in Open Translation run by faculty at the Department of Languages, The Open University, UK, in the autumn of 2012. It was the second MOOC in the UK (Bayne & Ross, 2014) and the first run by the institution. The course introduced participants to the concepts of open content and open practice, in particular, Open Translation and Open Educational Resources. It explored the use of open tools to facilitate translation, including dictionaries, terminology databases, and machine translation (Google's Translation Toolkit). It also provided practical experience in the use of open translation tools such as Amara for the subtitling of videos and Transifex to handle the crowdsourcing of text-based translation.

Open Translation (Hyde, 2009) is a practice that takes advantage of open source software, open content, and open models of production to harness the efforts of distributed communities of volunteers. By removing barriers to access in terms of tools and content, open translation efforts enable volunteers to contribute their work to the joint enterprise of making content widely available in many languages. Wikipedia Translation, TED Open Translation Project, and Global Voices are well known examples of large-scale open translation initiatives that engage thousands of volunteer translators to achieve the translation of thousands of resources into hundreds of languages.

Open Educational Resources (OER) are “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others” (Hewlett Foundation, n.d., n.p.). Being allowed to modify a resource can include the possibility of translating it to other languages and, depending on the license, adapting it to other cultural and linguistic realities (what is generally known as localization). Yet, the OER movement is only slowly waking up to the importance of translation and localization as a means to transcend linguistic and cultural barriers (Beaven, Comas-Quinn, Hauck, de los Arcos & Lewis, 2013).

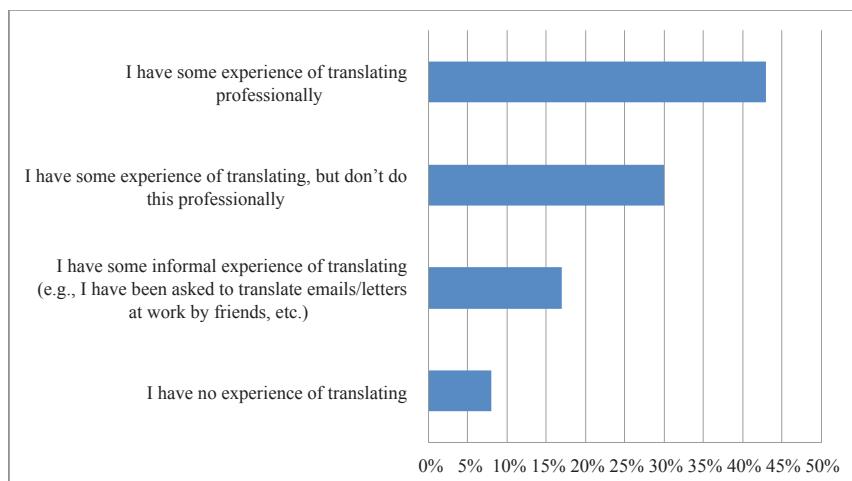
Exploring the intersection between Open Translation and OER through a MOOC format was a deliberate choice. We hoped to find out whether the time-frame and structure of an open course would allow individuals to coalesce around the exploration of a joint interest. OT12 was an open online course that included readings, videos, practical activities, discussion forums, and webinars with experts. There was no formal assessment, but participants could obtain a free participation badge by linking to evidence of their online contributions. The course lasted 8 weeks and, at the course start, there were almost 300 registered participants (although 600 individuals had registered an interest and received email updates twice a week for the duration of the course).

5. Participants

An activity involving a language profile questionnaire, completed by 196 participants in the first week of the course, revealed that over two thirds (68%) of respondents considered themselves highly proficient in their second language (rat-

ing themselves at level C1 (29%) or C2 (39%), the highest levels of the Common European Framework of Reference for Languages. Likewise, most participants had experience of translating, professionally or otherwise (see Figure 2), leading us to conclude that those attracted to this MOOC were already in possession of considerable relevant knowledge and sought to extend it by joining OT12.

Figure 2
Translating Experience of OT12 Participants



We know that MOOCs, even content-based, instructivist xMOOCs, attract highly qualified participants, a majority of whom are in possession of graduate and even postgraduate qualifications (Breslow et al., 2013; FutureLearn, 2014). What we see in OT12 echoes this trend and confirms Downes' (2012b) claim that those interested in MOOCs, cMOOCs in particular, enter with a certain amount of preparation: "What we are trying to do with a MOOC," he posits, "is to *create an environment* where people who are more advanced reasoners, thinkers, motivators, arguers, and educators can practice their skills in a public way by interacting with each other" (n.p.).

A precourse questionnaire also administered in the first week and completed by 56 participants helped identify the specific reasons for joining OT12. The overwhelming reason was learning more about translation (73%), followed by an interest in open tools, OER, or language learning (29%), professional or work-related development (18%), and taking the course to complement other studies (16%).

Asked to name the factors they thought would make for a successful MOOC experience, two thirds (67%) of respondents chose "working collaboratively with others," and 37% admitted that they were seeking help from their peers, both with the translation process and with turning translating into a profession. On the other side, 25% stated they were ready to share their own practical and professional experience with others.

The emphasis in OT12 was on skills development such as learning to use open translation tools through the completion of translation tasks. Considering Lane's (2012) categorization and the suggested reconceptualization of her taxonomy, OT12 would feature towards the task-based end of a MOOC continuum. At the same time most translation tasks had been designed to be carried out collaboratively, and successful task completion (and therefore successful learning) was heavily dependent on clusters of participants working together. Yet, OT12 was clearly not a cMOOC because connecting with other participants and deriving knowledge from the interactions with participants and facilitators was a complementary rather than an integral part of the course. The way in which OT12 had been designed made it perfectly possible for some participants to find out about the tools and processes and try out the tasks without interacting with others. In fact, the levels of participation in the forum activities would support the claim that this was possibly the most common form of participation in this course.

There are strong indications though that many participants came to the MOOC with clear ideas about the role and purpose of collaboration. In the following section we delve into sociality theory and explore its core elements: empathy, altruism, reciprocity, fairness, and collaboration, before returning to OT12 to find examples of sociality in action.

6. Sociality Theory

The last three decades have witnessed large amounts of research across a wide range of disciplines, which has given rise to what seems to be a genuinely new field of knowledge: the study of human sociality. This work has been engaged in by biologists (Nowak & Highfield, 2011), behavioral scientists and experimental economists (Henrich et al., 2004; Gintis, Bowles, Boyd, & Fehr, 2005), developmental psychologists (Tomasello, 2009) and philosophers (Gilbert, 1992, 1996, 2000; Tuomela, 2007). What they all posit is that human behavior, rather than being based purely on self-interest, has to take into account the interests, emotions, and well-being of others. In the preface to a volume of empirical cross-cultural studies of human gaming behavior, *The Foundations of Sociality*, Henrich et al. (2004) explain:

In the past, the assumption that actors were rational was typically linked to what we call the *selfishness axiom*—the assumption that individuals seek to maximize their own material gains ... and expect others to do the same. However, experimental economists and others have uncovered large and consistent deviations from the predictions of the textbook representation of *Homo economicus*. Literally hundreds of experiments in dozens of countries using a variety of experimental protocols suggest that, in addition to their own material payoffs, people have social preferences: subjects care about fairness and reciprocity, are willing to change the distribution of material outcomes among others at a cost to themselves, and reward those who act in a pro-social manner while punishing those who do not. (p. 8)

Nobody denies that self-interest plays a role in motivating human behaviors,

including that of volunteer translators and MOOC participants. One's primary motivation for joining a MOOC will almost certainly be a personal desire to learn interesting and relevant information. MOOC organizers too, as Cormier's (2014) talk reveals, may also sometimes act from selfish motives. Equally, translators may work without pay in the hope of enhancing their portfolios and gaining paid work later. But sociality theory tells us that egoism on its own is insufficient to account for our social choices and preferences, and that is as true of a MOOC in Open Translation as it is of our behavior elsewhere. Humanity has a capacity for sharing intentions, which fundamentally modifies the nature of action. All of us too have a propensity for collaboration which is as strong as—and sometimes stronger than—our more selfish, or perhaps merely more personal motivations. This is as true of learning as it is of our economic activity. As the social and moral philosopher Raimo Tuomela explains (2007): "in we-mode groups, basically all members both teach others and learn from others and, when need be, are collectively committed to such teaching and attempts to learn" (p. 223).

Accordingly, the developmental psychologist Michael Tomasello views humanity as a uniquely cooperative species which readily collaborates in the pursuit of joint goals:

To an unprecedented degree, *homo sapiens* are adapted for acting and thinking cooperatively in cultural groups, and indeed all of humans' most impressive cognitive achievements—from complex technologies to linguistic and mathematical symbols to intricate social institutions—are the products not of individuals acting alone, but of individuals interacting. (Tomasello, 2009, pp. xv-xvi)

By common consensus sociality is based on five common characteristics: empathy, altruism, reciprocity, fairness and collaboration.

6.1 Empathy

Empathy, the capacity to identify emotionally with the feelings of others, is a fundamental human trait, inherited from our hunter-gatherer ancestors. We tend to picture them as lone predators, but, as Frans de Waal (2009) argues, community was the dominant value in hunter-gatherer society:

The old way ... is one of reliance on one another, of connection, of suppressing both internal and external disputes, because the hold on subsistence is so tenuous that food and safety are the top priorities. (p. 25)

In fact, de Waal argues, we have no control over whether we feel empathy or not. Evolution has ensured that all humans are hard wired to empathize with one another:

We're pre-programmed to reach out. Empathy is an automated response over which we have limited control. We can suppress it, mentally block it out, or fail to act on it, but except for a tiny percentage of humans—known as psychopaths—no one is emotionally immune to another's situation. (p. 43)

6.2 Altruism

While empathy is a matter of feeling, altruism implies action. Indeed, experimental economists define altruism precisely “as being costly acts that confer economic benefits on other individuals” (Fehr & Fischbacher, 2003, p. 785). Such acts are undertaken irrespective of the other person’s previous actions and without anticipating any particular future outcome. That is not to say that they are without emotional resonance. But their primary dimension is moral. For Camerer and Fehr (2004) “altruism thus represents unconditional kindness” (p. 56). Tomasello (2009), for his part, defines altruism as “one individual sacrificing in some way for another” (p. xvii). Tomasello too sees altruism as a trait, which differentiates humankind from other species:

Children are altruistic by nature, and this is a predisposition that (because children are also naturally selfish) adults attempt to nurture. From very early in ontogeny, human children are altruistic in ways that chimpanzees and other great apes are not. (pp. 47 and 104)

6.3 Reciprocity

Altruism and reciprocity are closely linked. While altruism may be defined as unconditionally kind behavior, “reciprocity means non-selfish behaviour that is conditioned on the previous actions of the other actor” (Camerer & Fehr, 2004, p. 56). What is more, one of the truly striking findings of experimental economics is that this kind of behavior is not necessarily predicated on the anticipation of being rewarded since it has been shown to occur in one-off encounters where no such expectation can be present. As Bowles and Gintis (2011) explain: “in experiments, we commonly observe that people sacrifice their own payoffs in order to cooperate with others, to reward the cooperation of others, and to punish free-riding, even when they cannot expect to gain from acting this way. We call the preferences motivating this behaviour *strong reciprocity*” (p. 20). Put in simple terms, what this means is that human beings have a culturally transmitted sense of what constitutes cooperative behavior and are prepared to incur personal cost both in cooperating themselves, and in punishing noncooperation in others.

6.4 Fairness

Another principle clearly associated with reciprocity is that of fairness, or inequity aversion. The human propensity for fairness has been repeatedly tested by behavioral scientists, using experimental games. An account of the workings of one of the best known of these, the “Ultimatum Game” is provided by de Waal (2009):

The fairness principle has been around since our ancestors first had to divide the spoils of joint action Researchers have tested this principle by offering players an opportunity to share money. The players get to do this only once. One player is given the task to split the money into two—one part for himself, the remainder for his partner—and then propose this split to the other. It is known as the “ultimatum game”, because as soon as the offer has been made,

the power shifts to the partner. If he turns down the split, the money will be gone and both players will end up empty-handed If humans are profit maximizers, they should of course accept any offer, even the smallest one. If the first player were to give away, say, \$1 while keeping \$9 for himself, the second player should simply go along. After all, one dollar is better than nothing. Refusal of the split would be irrational, yet this is the typical reaction to a 9:1 split. (pp. 185-187)

What experimental games like this consistently show is that fairness means more to most human beings than personal gain. Indeed, some people feel so strongly about fairness that they are prepared to pay a considerable personal price for it. In the words of Camerer and Fehr (2004): “people who dislike inequality are willing to take costly actions to reduce inequality, although this may result in a net reduction of their material payoff” (p. 56).

6.5 Collaboration

For Michael Tomasello (2009), collaboration is another distinguishing human capacity. While great apes hunt in numbers, they do so as individuals. When humans forage, they do so as a group.

Humans engage in an extremely wide array of collaborative activities, many of these on a very large scale with non-kin and many under the aegis of social norms in the context of symbols and formal institutions. ... Humans live in cultures premised on the expectation that [their] members participate in many different kinds of collaborative activities involving shared goals and a division of labour, with contributions by all participants and a sharing of the spoils at the end among all deserving participants. (pp. 185-186)

For clarity and accessibility, the view of human nature which emerges from half a century of experimental research has been stated here in its simplest form. Those unfamiliar with game theory, or with the notion of sociality, may feel that too much has been accepted too easily. If so, they are welcome to investigate for themselves the work of Bowles, Camerer, Fehr, Gintis, Henrich, Tomasello, and others. What they will discover is that the findings of these scholars, if occasionally reported in populist form, are based on carefully controlled and replicated studies, conducted by academics who, without exception, have global reputations in their respective fields. Together, their views represent a consensus for which there is—to the best of our knowledge—no competing alternative.

Sociality theory envisages that knowledge is acquired in three different ways. However, it stresses the primacy of social learning, by means of the “vertical (parents to children), horizontal (peer to peer), and oblique (non-parental elder to younger) transfer of information” (Bowles & Gintis, 2011, p. 15). Since prosocial behaviors represent the norm in human social activity, one would expect them also to be displayed in collective learning contexts such as MOOCs. The question then arises: what role does sociality and the human propensity for cooperation play in ensuring the success or otherwise of these online learning communities.

Before examining the data and evidence of sociality in the MOOC under study, OT12, we will consider the methodology employed in this study, and the challenges associated with researching open content created by online communities and/or in open online spaces.

7. Methodology

Researching open online communities presents particular ethical challenges around informed consent and defining the boundaries between what is public and what is private (Markham & Buchanan, 2012).

The data used in this study was drawn from an electronic corpus of participants' interactions in open forums in which the researchers were also participants and from responses to two online questionnaires made available to participants during the first and last week of the course. Whereas the questionnaires included a clear section at the start with information about anonymity and consent to allow data to be used for research purposes, the same was not true for the discussion forums. The authors treated forum discussions as public spaces where participants' postings were made in the spirit of sharing and with the implied consent that others could treat that information as public. However, given that in a global group participants are more likely to have different cultural and personal sensitivities around the issue of privacy (Vieweg, 2010, as cited by Esposito, 2012) and in an effort to avoid causing distress to participants, the authors have anonymized the forum contributions quoted here.

Additional data on participants' linguistic profiles and expertise in the area of translation was gathered through a course activity in week one that took the form of an online questionnaire set up so that participants would have to provide their own information before they were allowed to see the collective data for the whole group. This, alongside all the forum contributions, became part of the course material and therefore falls under the site license for the platform in which the course was hosted, OpenLearn Works, which uses a Creative Commons-Attribution-Non-Commercial-Share-Alike license.

In the following section we look at some examples, taken from forum contributions and coded using a P followed by a number to distinguish the participants, and FD followed by a number to identify the forum discussions. We have chosen to look at five forum discussions in particular: Why translate? in week 1 (FD1); OER in week 3 (FD2); Revision in Open Translation projects in week 4 (FD3); Other translation projects, in the Transifex forum in week 5 (FD4); and Why volunteer, in the Editing and revising forum in week 6 (FD5). The choice was dictated by the consideration that the topics addressed in these discussions lent themselves better to statements about the nature of collaboration, fairness, reciprocity, altruism, and empathy, the main tenets of sociality theory as explained above.

8. Evidence of Sociality in the OT12 MOOC

8.1 Empathy

As we saw above, empathy is perhaps the emotional and motivational starting point for the behavior we associate with sociality. It was expressed by a number

of the MOOC participants. A participant who is a member of the Global Voices online community of volunteer translators writes:

Global Voices is amazing! Brings issues that affect citizens in other countries closer to us. We are a big neighborhood, not strangers anymore. It also shows that people over the world care about what happens in other places. (P1, FD1, 6/10/2012)

A month or so later, another participant reflects:

Volunteering, in any activity, brings a reward that by far compensates the effort. Besides that, being part of a team, you get in contact with people that think like you, people from all walks of life. (P2, FD5, 20/11/2012)

8.2 Altruism

It is a short step from identifying with others to actually helping others. Another MOOC participant voices the sense of satisfaction that having done so brings:

A volunteer has many reasons for doing what he does: feeling useful or good because he knows (or at least, he should know) he is doing something beneficial for other people. (P3, FD5, 20/11/2012)

She is not alone in this. Two other MOOC participants had expressed very similar ideas previously:

My first translation job, which I am about to begin, will provide access to English speakers for medical applications. I consider this very important, as it could potentially save lives. (P4, FD1, 16/10/2012)

As translators, we can help to bridge the divide between different languages but also between different cultures If the language playing field is levelled a bit, then we may find that it becomes easier to understand the other, rather than judge or make sometimes uneducated assumptions of other (P5, FD1, 14/10/2012)

8.3 Reciprocity

If our MOOC participants are aware of the benefit their work as volunteer translators brings to others, they are far from being self-indulgent about this. One participant details the benefits she derives—as a practicing translator—from working with and helping others.

Some of you have also indicated that volunteer translation becomes a way of learning. For many translators, especially those who are freelancers or work for a company from home, translation is often a lonely endeavour. The opportunity to work with other translators becomes a way [of] freshening up our skills. Too often, we fall into bad translation habits and where there is no revision structure, the quality of our work begins to suffer. By working with a community of translators, we become exposed to new ideas and other strategies that could well help us in our professional work. (P6, FD5, 20/11/2012)

Such benefits can go beyond the merely professional and be intensely personal. The next day, another participant responds by revealing that:

Volunteer translation communities can help introverts like me to cooperate with other people more effectively being a TED translator I have learnt many new and exciting things thanks to the translations of other volunteers but at the same time I have made ideas accessible to other people through my translations. (P7, FD5, 21/11/2012)

It does not seem outrageous to suggest that if acting as a volunteer translator can help this participant overcome her shyness, enabling her to pass on ideas in a way that she might otherwise find difficult and participating in a MOOC by posting as she has just done can be equally enabling and empowering for her.

8.4 Fairness

Scholz (2012) and Tobin (1998) emphasized the need for fair dealing to ensure success in a MOOC. A similar sense of fairness is evident in our volunteer translators, for example in this contribution:

Translate to provide disseminate data more widely, invite minority participation and put all participants on equal footing [*sic*]. (P4, FD2, 16/10/2012)

Far from being a lone voice, this posting is representative. To give just one other example, a few days previously another participant had written:

I do agree information should be made available in different languages and we should strive to share and empower. This is why I translate content and use the internet as a tool for change. So that those who never had the chance to acquire foreign language skills are not left out of the loop. (P8, FD1, 13/10/2012)

8.5 Collaboration

Finally, on the question of collaboration, as essential to MOOC participants as it appears to be to volunteer translators, the same participant writes:

I do believe that collaboration is essential—"Translation is crucial for a global society to function together." (P8, FD5, 19/11/2012)

9. Sociality and Learning

That organizers of MOOCs are at least intuitively aware of the principles of sociality is—as we saw—evident in comments by both Scholz (2012) and Tobin (1998). Thus, the advice given to MOOC-based learners by Scholz (2012) embodies the principle of reciprocity, which she urges participants to put into practice:

Take a penny, leave a penny. Even if you're new to the subject, there is likely some question you *can* answer. Make the effort. If you post a question, try to answer a question for someone else. (n.p.)

Similarly, Tobin's (1998) advice on how to conduct oneself in a PLN makes it clear that, to be successful, learners will need to temper self-interest with reciprocal altruism, offering help in anticipation of receiving help:

Building a personal learning network requires that you not only seek to learn from others, but also that you also help others in the network learn. Even when you are a novice in a field of learning, you can still make contributions. Did you read an article that might be of interest to others? Then distribute it to others in your network with a short note that you thought they might find it interesting. Did you hear of a conference on the subject? Let others know about the program and speakers and, if you attend, circulate your notes and papers you collect to other network members. (n.p.)

Sociality theory can also explain some of the ways in which learners behave in MOOCs. Given that it was populated by learner-participants who already spent time acting as volunteer translators, the OT12 MOOC perhaps offers an especially propitious environment for demonstrating this, and the examples above go some way to illustrate how sociality in action oils the wheels for collaboration and collective learning in an open online environment.

Cormier (2014) concurs that MOOCs work best (i.e., are most likely to be self-organizing and self-sustaining) if the population which joins them is somehow "filtered," that is to say, if they are from the start a more or less coherent group with a clearly defined set of shared interests. OT12 was announced as a MOOC devoted to Open Translation. Many of its learner-participants therefore shared a passionate commitment to their role of volunteer translators (of material such as TED Talks and Wikipedia entries). They were, in other words, people who spent much of their time exercising global citizenship by helping to create a world in which people were better informed and knowledge was spread more equally across languages and cultures. Though the traits associated with sociality, as they appear in the participants in the OT12 MOOC, are often expressed in relation to their activity as translators, they were clearly articulated in a series of postings and applied in equal measure to their activity in the MOOC.

10. Conclusion

OT12 drew heavily on a community of like-minded, relatively knowledgeable individuals which included, among others, professional and volunteer translators, as well as students and teachers of both languages and translation. In this chapter we have attempted to explore both the behavior of successful learners in MOOCs and the motivation of unpaid volunteer translators, by analyzing what the latter say about themselves in a MOOC devoted precisely to developing the skills and techniques necessary for success as both learners and translators. Our conclusion is that the traits associated with human sociality—empathy, altruism, a commitment to reciprocity, a sense of fairness, and above all a readiness to collaborate in the pursuit of shared intentions and common goals—inform their activity not only as volunteer translators but also as successful learner-participants in a MOOC. Thus we believe that human sociality theory offers a suitable framework for capturing

and analyzing what happens in MOOCs where learners experience success, those MOOCs that feature towards the task-based/network-based end of the proposed MOOC continuum in particular.

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Chapter 5

The Role of Interaction in MOOCs and Traditional Technology-Enhanced Language Courses

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Summary

Technology-enhanced courses have become a crucial component of higher education curricula over the past decade due, in part, to the collaborative nature of Web 2.0 tools which allows for collective generation of new knowledge, multimodal communication, active participation, and social networking. As a result of these new affordances of the online medium, differences between course delivery formats are becoming much less crucial than differences in course design. This article examines the interaction patterns of three types of technology-enhanced courses (blended, online, and MOOC) and analyzes the relationship between delivery format and interaction using the theoretical model proposed by Moore (1989) and further refined by Anderson (2003a). The study focuses on the interaction among students, between students and instructor, and between students and content. Specifically, the study looks at differences in interaction patterns and potential correlations with delivery format and with course and student success.

1. Introduction

Technology-enhanced (TE) courses have become a crucial component of higher education curricula over the past decade. TE teaching can be defined as any form of formal instruction that takes advantage of the affordances of Web 2.0 technologies to significantly modify or enhance content delivery, assessment, and interaction. According to Allen and Seaman (2014), 7.1 million higher education students were taking at least one online course in 2013; this number represents one-third of all students enrolled in U.S. colleges and universities. The total number and percentage have been growing steadily over the past decade, with a compound annual growth of 16.1% for online students compared to only a 2.5% growth in total enrollments in higher education (Allen & Seaman, 2014). Additionally, as reported by Dahlstrom, Walker, and Dziuban (2013), 79% of higher education students had taken at least one blended course in 2013 and 3% had enrolled in a Massive Open Online Course (MOOC).

With the spread of Web 2.0 technologies in education, differences between course delivery formats are becoming much less crucial than differences in course design. As new technologies facilitate a more active role of the learner and the subsequent emphasis on learning rather than teaching, it is the learner's engagement with course materials, with other learners, and with the instructor that serve to distinguish between more and less effective courses. What used to be essential differences between face-to-face (F2F) and distance learning formats (e.g., the ability to interact with others, frequent and prompt feedback, a sense of community, etc.) are now blurred by the incorporation of technologies and formats that allow learners to engage in similar learning processes regardless of the location of the course, both in space (F2F versus blended or online) and in time (synchronous versus asynchronous).

One of the reasons for this apparent convergence of different delivery formats that has also been pointed out as responsible for the growth of TE courses in general is the increased levels of interaction that are facilitated by the online environment. The collaborative nature of Web 2.0 tools allows for collective generation of new knowledge, multimodal communication, active participation, and social networking. All of these factors are perfectly aligned with a collaborative constructivist view of learning in which knowledge is the result of reciprocal, collaborative communication between teachers and learners. These changes have destabilized the traditional roles of teachers as creators or disseminators of knowledge and students as mere consumers and have created new opportunities for interaction both among the participants in the learning process and between them and the course materials. This reconfiguration of established roles has become even more evident in the case of MOOCs in which not only the structure of the course, but the motivation to complete it may be quite different from what is typical in a traditional course. This may affect how learners take advantage of the opportunities opened up by the online environment.

Perhaps one of the main impacts that Web 2.0 has had on course design is the new possibility that it creates for increased interaction among the participants in the learning process and between them and the course materials. However, little research has been done to date, particularly in the field of language learning, to study how different types of interaction facilitated by different course formats may ultimately affect the quality of the learning experience.

When discussing the nature of interaction in distance learning almost twenty years ago, Kearsley (1995) spelled out a series of questions about the relevance of interaction in a course, the effect that interaction may have on learning outcomes and on different types of learners, and whether certain types of interaction are more appropriate than others in certain contexts. Online and blended courses have experienced a tremendous upsurge in college campuses worldwide over the past two decades, and language courses have been no exception. However, many if not all of Kearsley's questions about interaction and, in particular, how interaction plays a role in the different TE learning formats still remain unanswered. The goal of this study is to provide some tentative answers by looking at the effect that

three different formats of TE language courses had on levels of interaction and the potential correlations between types of interaction and course success.

2. Review of the literature

2.1 Affordances of TE Teaching and Learning

The term affordance refers to “the qualities or properties of an object that define its possible uses or make clear how it can or should be used” (Merriam-Webster online). According to Anderson (2004), “The greatest affordance of the Web for educational use is the profound and multifaceted increase in communication and interaction capability that it provides” (p. 42). This section provides a brief overview of the relationship between the affordances of online technologies and the opportunities for interaction that they create in TE teaching and learning.

Affordance theory as originally proposed by Gibson (1977) posits that we perceive the world not only as shapes and spatial relationships, but also in terms of object possibilities for action. In Gibson’s view, how we interact with the environment is a direct consequence of how we perceive it. Perhaps Gibson’s most important contribution is his rejection of a mechanistic view of the relationship between humans and their environment which had been prevalent in psychology until the first part of the 20th century. According to this mechanistic interpretation, our actions are caused by stimuli that are present in and inherent to the environment. Gibson, however, posits that actions depend on the specific relationship between the properties of the environment and the actor. For example, a chair affords sitting in it only if the actor is of a certain height and size. In that sense, an affordance is not only a quality of the environment but the relationship between that quality and an actor’s physical capabilities, previous knowledge and experience, and even cultural background. Affordances, then, do not cause behaviors, but rather constrain them.

This view of affordances not as stimuli that cause certain behaviors, but as opportunities that simply make those behaviors possible, is shared by Day and Lloyd (2007) who claim that “even with suitable structure, it cannot be assumed that the affordances for learning that might appear to be provided by properties of online technologies will be realised in any given context” (p. 21).

The relationship between affordances and agency is very relevant to the study of human-computer interactions and therefore to the purpose of this study. In a more recent reanalysis of Gibson’s early theories, Withagen, de Poel, Araújo and Pepping (2012) explore the relationship between affordances and agency. They go a step further by claiming that “affordances are not mere opportunities for action, but that they can also invite behaviors” (p. 251) and later stress that “the environment is not a neutral manifold of action possibilities the agent simply chooses from; rather, the environment can invite a certain action or even urge a person to do something” (p. 253). As a consequence, van Lier (2000) suggests that in a pedagogical context we should “structure the learner’s activities and participation so that access is available and engagement encouraged” (p. 253).

The advent of Web 2.0 technologies and the level of user interaction that they

afford have had a profound effect on teaching and learning. In the field of second language teaching and learning, where interaction has always been considered a crucial component, there has been a significant amount of research published over the past few years examining how these affordances encourage and facilitate interaction. Some researchers have looked at how the affordances of Web 2.0 technologies can affect task and course design (Hampel, 2006, 2010; Hampel & Pleines, 2013; Yilmaz & Granena, 2010). Looking specifically at interaction among learners, a number of studies have examined how the use of collaborative online tools such as blogs or wikis, or productivity apps such as Google Docs may have a positive effect on second language writing (Arnold, Ducate, & Kost, 2009, 2012; Blin & Appel, 2011; Comas-Quinn, Mardomingo, & Valentine, 2009; Mak & Coniam, 2008; Miceli, Visocnik Murray, & Kennedy, 2010; Murray & Houigan, 2008). Yet other studies have assessed the effect of TE teaching on learners' oral skills (Blake, Wilson, Cetto & Pardo-Ballester, 2008; González-Lloret, 2011; Hampel & Hauck, 2004; Jeon-Ellis, Debski, & Wigglesworth, 2005; Kenning, 2010; Payne & Whitney, 2002; Tudini, 2010, Yanguas, 2010).

These studies, as well as most of the existing literature on language-learner interaction in computer-mediated contexts, have focused on the negotiation of meaning that results from interaction elicited by specific task design and its potential consequences for second language acquisition. However, the current study follows a different approach by looking at the possible correlation between delivery format, interaction, and course success without looking at the specific effects of interaction on the learners' interlanguage. The following section provides an overview of research on the importance of interaction in TE teaching and learning and the relationship between interaction and course design.

2.2 Interaction

The role of interaction has always been a central topic of discussion in teaching and learning. Chickering and Gamson (1987) defined the principles for good practice in undergraduate education and identified contact between students and faculty, cooperation among students, and timely feedback as some of the crucial elements. Interaction in distance education in general and more recently in online teaching has been the object of even more intense scrutiny since it was generally assumed that any format other than F2F instruction would result in a lack of personal interaction among participants. Early adopters of online learning models were quick to understand the potential of the format to facilitate and encourage collaborative experiences. Although the first forays into online teaching struggled with the challenges of fostering social presence and interaction in what was then a text-based asynchronous format, recent technological improvements in computer-mediated communication have made online interaction much more common and efficient.

The positive effect of interaction in TE courses has been widely documented in recently published research. Lou, Bernard, and Abrami (2006) conducted a meta-analysis of 103 studies to determine how media is used to support distance education. Their findings indicate that course designs that support independent learning

are generally less effective than those that facilitate interaction and collaboration. The U.S. Department of Education's (2010) meta-analysis of online and blended courses points out that one of the most significant effect sizes when comparing TE and F2F instruction was found "when students in the online condition were engaged in instructor-led or collaborative instruction rather than independent learning" (p. 51). In another meta-analysis that focused more specifically on the effects of different types of interaction in distance education courses Bernard et al. (2009) found that strength of interaction positively correlates with achievement outcomes.

A number of governmental and private organizations in the field of online education have published reports and best practices documents in the past few years that also emphasize the important role of interaction. More than a decade ago, The Institute for Higher Education Policy (2000) published a list of 24 benchmarks that are essential to guarantee the quality of internet-based education. As one of the benchmarks states: "Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail" (p. 2). More recently, Shelton and Saltsman (2014) includes a rubric to assess the quality of online programs. One of the nine criteria used to determine course effectiveness is 'Social and Student Engagement,' which is further defined as follows: "Students should be provided a way to interact with other students in an online community (outside the course)" (p. 56).

While researchers and practitioners alike have agreed for years on the crucial role of interaction in education in general and in distance and TE learning in particular, specific descriptions of the concept of interaction have been much less frequent (Simpson & Galbo, 1986; Daniel & Marquis, 1979; Moore, 1989; Wagner, 1994). Moore provided the first well established definition of interaction as a fundamental characteristic of any distance course. According to his model, critical interaction in educational contexts can have three components: learner-instructor interaction (L-I), learner-content interaction (L-C) and learner-learner interaction (L-L).

According to Moore (1989), the goal of L-I interaction is "to stimulate or at least maintain the student's interest in what is to be taught, to motivate the student to learn, to enhance and maintain the learner's interest, including self-direction and self-motivation" (p. 2). In F2F formats, this type of interaction has always been at the core of the learning process. In online teaching, L-I interaction can be synchronous through the use of video or text-based communication or asynchronous through email or discussion boards. With blended learning and even in some cases with online courses, students may supplement computer-mediated L-I interaction with traditional F2F interaction on campus.

In L-L interaction, students work with other students either individually or in groups. This form of interaction has been the mainstay of most language courses for decades. In TE courses, particularly fully online ones, L-L interaction has been facilitated by synchronous use of text or video chats, including telecollaboration, asynchronous discussion boards, blogs, wikis, and email messaging. Again, in blended and some online contexts, learners may have opportunities to supple-

ment their online interaction with F2F contact with other learners. In the case of MOOCs, L-L interaction becomes a crucial design component, particularly peer-assessment, since the massive aspect of the format makes L-I interaction very challenging.

In Moore's (1989) definition, L-C interaction is "the process of intellectually interacting with the content that results in changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind" (p. 2). In traditional teaching this process would be almost exclusively limited to interaction with the printed textbook and perhaps some audio or video materials used in class. According to Bernard et al. (2009), L-C interaction in distance education formats "may include reading informational texts, using study guides, watching videos, interacting with computer-based multimedia, using simulations, or using cognitive support software (e.g., statistical software), as well as searching for information, completing assignments, and working on projects" (p. 1248).

This characterization and definition of the different possible types of interaction provides a useful framework for teachers and course designers to understand what to take into account when developing and delivering TE courses. Moore (1989) suggests that educators "organize programs to ensure maximum effectiveness of each type of interaction, and ensure they provide the type of interaction that is most suitable for the various teaching tasks of different subject areas, and for learners at different stages of development" (p. 5). However, as Miyazoe (2012) notes, Moore discusses the value of each type of interaction, but he "provides no rationale for systematically enhancing, reducing or prioritizing one mode over another, thus leaving designers with only a fuzzy notion that 'interaction' is good, but little guidance as to which to build into effective and efficient courses" (p. 2).

A related line of research has looked specifically at the relationship and ideal balance between independence and interaction (Daniel & Marquis, 1979; Anderson & Garrison, 1998; Anderson, 2003a; Miyazoe, 2012). Daniel and Marquis (1979), writing at a time when mail and telephone were the only options for interaction in distance education, advocate for finding a balance between learner independence and interaction with the instructor as a crucial recipe for success. Once computer-mediated-communication became a factor in the learning process, Anderson provides examples in which learning can happen when students are working independently and with little or no contact with the teacher or other learners as long as high levels of interaction between students and content are present. Anderson and Garrison argue that a learning model that promotes and encourages interaction necessarily shifts the balance of control in the educational process. This new balance "will have to be negotiated based on the various types of interaction" (p. 110). Miyazoe, acknowledging that independence and interaction are two sides of the same coin, claims that "even if a program provides different kinds of interaction with specific intentions, learners also adjust to it in a way which fits their personal needs and interests, leading to a more personalized and hopefully more effective and efficient learning process."

In order to address the questions raised about the balance between interaction and independence and also as an extension to and application of Moore's (1989)

three types of interaction, Anderson (2003a) proposes what he calls the Interaction Equivalency Theorem, which provides a theoretical basis for judging or determining which combinations of the different types of interaction are reasonable and effective in different teaching formats. In essence, the Equivalency Theorem suggests that different delivery formats can provide roughly equivalent learning experiences by providing different combinations of each type of interaction. The main elements of the theorem are summarized by Anderson as follows:

Deep and meaningful formal learning is supported as long as one of the three forms of interaction (student-teacher; student-student; student-content) is at a high level. The other two may be offered at minimal levels, or even eliminated, without degrading the educational experience. High levels of more than one of these three modes will likely provide a more satisfying educational experience, although these experiences may not be as cost- or time-effective as less interactive learning sequences. (p. 3)

The interesting—as well as counterintuitive—proposition that follows from these theses is that a course delivery format that includes minimal levels of or has practically eliminated one or two types of interaction can be effective as long as interaction of the other type(s) is present at a high level. Because of the significance and implications that this claim may have for course design, we decided to test the soundness of Anderson's Equivalency Theorem when measuring the strength of the different interaction patterns and the effectiveness of the courses analyzed in this study. The purpose of the current study is to find out how different delivery formats support or conduce to particular interactions and how those interactions affect the success of a course. The specific research questions are as follows:

1. Is there a difference in patterns of student interaction based on course delivery format (blended, online and MOOC)?
2. Is there a correlation between patterns of student interaction and students' success as measured by course final grades?
3. Is there a correlation between patterns of student interaction and course success as measured by students' and instructors' satisfaction?

3. Methods

3.1 Courses and Participants

The courses that were analyzed for this study are all Spanish courses taught at a major university in the US during the spring and fall semesters of 2013. The study looks at patterns of interaction in three delivery formats—blended, fully online, and MOOC—and at different levels of instruction.

The blended courses included in the study were 4 sections of first-semester Spanish ($n = 72$) taught by two different instructors and two sections of third-semester Spanish ($n = 56$) taught by the same instructor. For ease of reading, the first-semester blended courses will be referred to as BLN1 and the third-semester courses as BLN3. Each instructor that teaches a blended course has a teaching as-

sistant assigned to the course whose responsibility is to provide additional opportunities for interaction during the F2F class time and feedback during the online component. These blended courses are organized in a 50/50 model so that half of their class time is F2F instruction (2 days a week) and the other half is online interaction. During the online portion of the course students have to interact with the content provided by the ebook and other online materials included with the textbook (reading and listening to authentic cultural content, games, quizzes, etc.) as well as communicate with the instructor and peers to complete assignments, post and respond to peers' blog postings, and so forth. The textbook used in BLN1 is *Nexos* (Spaine Long, Carreira, Madrigal Velasco, & Swanson, 2013), a commercially available program published by Heinle. BLN3 uses *Acceso* (n. d.), an Open Educational Resource (OER) as its main teaching tool. *Acceso* is a complete, interactive curriculum developed by the University of Kansas for intermediate-level learners of Spanish. The majority of the students enrolled in these courses are undergraduates seeking to fulfill a language requirement. Placement in the courses is determined by a placement test or by completing the previous course in the sequence. Both blended courses use *Canvas* as their learning management system. Announcements, messages, blog postings, discussions, assignments, and some assessments are done in *Canvas*.

The online course analyzed in this study is a fourth-year Latin American Culture and Civilization course delivered fully online in *Canvas*. This course will subsequently be referred to as ONL. The course used a traditional textbook from which students had weekly reading assignments. Instruction was delivered via video lectures recorded by the instructor with additional video or audio materials. All communications and interactions between students and with the instructor were done online, as well as quizzes and exams. The majority of the students enrolled in this course ($n = 85$) were undergraduates pursuing a major or minor in Spanish and had, on average, an advanced level of proficiency in the language. These students are typically enrolled in several F2F courses on campus in addition to this online course so, although students cannot have F2F interactions with their peers as part of the course, they can certainly have contact with students during some of their other classes on campus.

The final course analyzed was a MOOC included in the first batch of MOOCs offered in 2013 by Canvas Network, a MOOC platform developed by *Instructure* (<http://www.instructure.com>). This course was a basic and practical introduction to Spanish phonetics and phonology, open to anyone with an elementary knowledge of the language. It was taught by a lead instructor and two teaching assistants who helped provide regular feedback to participants. All course materials were developed by the instructor and consisted mostly of recorded lectures, quizzes, samples of native speakers' talk, and lecture notes. A high number of self- and peer-evaluated activities were included as part of the course, as well as practice activities that received individualized feedback from the instructors. According to the background questionnaire distributed to participants at the beginning of the course, the level of Spanish proficiency varied widely, ranging from some

whose proficiency was mostly passive (reading and listening) to others who had native speaking proficiency in the language. There was also a wide range of first languages represented among participants with English, Chinese, Portuguese, and Russian in the majority. Although the course did not require previous knowledge of phonology or phonetics, a number of students indicated having had some instruction in those areas. As is often the case with MOOCs, average age and academic background of participants in this course were quite different from what is typical in most undergraduate courses.

Completion rates in this course were relatively low compared to normal for-credit courses, which is also frequent in MOOCs (Hill, 2013a). The course was initially capped at 500 students, but a majority of those enrolled did not complete most of the course. For this study, we looked at the type and level of interactions of those students who had completed at least 80% of the course content ($n = 89$).

Table 1 summarizes the main characteristics of each of the courses.

Table 1
Description of courses included in the study

Course code	Level	Content	Format	Length	Teaching materials	Participants	# of students
BLN1	First semester	Beginning Spanish	Blended 50/50	16 wks	Commercial textbook with ebook	Undergrad.	72
BLN3	Third semester	Intermediate Spanish	Blended 50/50	16 wks	OER	Undergrad.	56
ONL	Fourth year	Culture and civilization	Online	16 wks	Traditional physical textbook	Spanish majors and minors	85
MOOC	Mixed levels	Pronunciation and phonetics	MOOC	6 wks	Instructor-developed content	Mixed	89

Note. Course types are first-semester blended (BLN1), third-semester blended (BLN3), fourth-year online (ONL) and Massive Open Online Course (MOOC).

3.2 Measuring Interaction and Success

For the purposes of this study learner-content (L-C) interaction was measured using the learner analytics tool in *Canvas*, which offers a breakdown of each student's access to course content (video lectures, ebook, assignments, quizzes, etc.) and support materials (syllabus, calendar, announcements, etc.). The learner analytics tool provides two types of information: the total count of students' access to individual pages and the number of times that students take some action on a page. The total count of pages accessed and actions taken per student was divided by the duration of the course expressed in number of days in order to generate daily average rates. For example, a student who accessed course resources 10 times in one day and performed 3 actions would get an access rate of 10 and an action rate of 3. L-C interaction is therefore reported in this study as access rates

(number of page views per student per day) and action rates (number of actions taken on pages per student per day) in each course. We believe that the distinction between access and action is an important one to make. Access rates are often an indication of individual learning style and determined to some extent by personal decisions regarding how often to access online resources. Access rates, normally, although not always, reflect receptive interaction with a resource, for example a video or reading materials. By contrast, action rates reflect a deeper level of engagement with the material; an engagement that requires some productive action on the part of the learner and is often tied to a grade or some other form of feedback from the instructor or from a peer.

Learner-learner (L-L) interaction was measured based on students' interaction with their peers online in the form of comments on discussion boards and blogs and responses to peer reviewed assignments. Each comment or response was considered an instance of interaction. Total L-L interaction counts were computed per student for each course and then a daily average was calculated.

Learner-instructor (L-I) interaction was measured by counting the number of instances that the instructor interacted with students individually or in small groups, via the course's internal messaging system, responding to blog or discussion postings, or providing feedback on assessments. These interactions could be initiated either by the instructor or by the student. General course announcements or other types of communications intended for a whole class were not considered instances of this type of interaction. Again, the total number of L-I interactions was counted and used to calculate the daily average of L-I interaction per course. For example, an average L-I daily rate of .5 would be assigned to a student who interacted with the instructor once every other day.

The three types of interaction analyzed in this study were then correlated with student success rates and course success. The measure of student success was students' final grade represented as a percentage. The average final scores in the three types of courses were very similar and the differences were not statistically significant. The MOOC had the highest final mean score at 84.26% followed by BLN1 with a mean score of 83.77%, and ONL with 82.12%; the lowest mean score was in BLN3 at 81.41%. Course success was measured using the student course evaluation form delivered at the end of the course. Reaction to the course's effectiveness was measured through two questions that asked students to rate on a 6-point scale (1-6) their overall level of satisfaction with the course.

4. Results

The following sections describe the results of the analysis of interaction types that were present in three types of TE courses and the correlation between interaction and student and course success.

4.1 Learner-Content Interaction

As illustrated in Table 2, the data provided by the courses' learner analytics tool illustrate some significant differences in L-C interaction rates among the three

course formats. Access to course pages differs among formats (blended, online, and MOOC), but also between the two blended courses. Figures 1 and 2 show a graphic illustration of the differences between the four courses.

Table 2
Learner-Content Daily Interaction Rates per Student

Course	<i>n</i>	Access		Action	
		<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>
BLN1	72	637	8.84	46	.64
BLN3	56	818	14.60	30	.53
ONL	85	534	6.28	37	.44
MOOC	89	997	11.20	77	.87

Figure 1
Daily Access Rates by Course

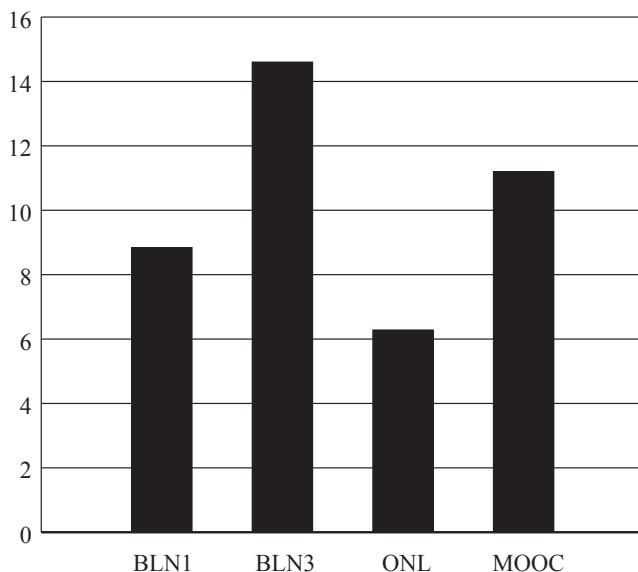
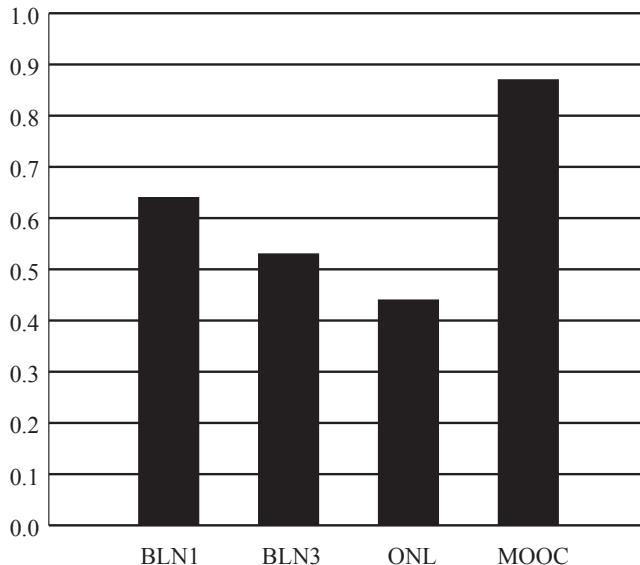


Figure 2
Daily Action Rates by Course



A one-way analysis of variance (ANOVA) was performed to determine the relationship between the type of instructional format and access rates. The result of the analysis was significant, $F(3, 298) = 24.925, p = < 0.01$ and is summarized in Table 3. A post hoc analysis was then conducted given the statistically significant result of the ANOVA. Tukey HSD tests were conducted to determine differences between all possible pairs. The results reveal that access rates were significantly higher in BLN3 than in the other three formats (see Table 4). The MOOC and BLN1 had significantly higher rates than ONL. The difference between BLN1 and the MOOC was not significant.

Table 3
One-way ANOVA of Learner-Content Access Rates

	SS	df	MS	F	p
Between	2,582.136	3	860.712	24.925	<0.01
Within	10,290.447	298	34.532		
Total	12,872.583	301			

Table 4
Post Hoc Analysis of Learner-Content Access Rates

Instructional format	Instructional format			
	BLN1	BLN3	ONL	MOOC
BLN1		*	*	
BLN3	*		*	*
ONL	*	*		*
MOOC		*	*	

*Indicates a statistically significant difference in access rates between members of a pair at $p < .05$.

However, as illustrated in Table 2 and Figure 2 above, action rates, which are arguably a better reflection of engagement with the materials, show somewhat different results. The MOOC shows the highest rates of action of the three formats followed by the two blended courses. The lowest rates are once again in ONL. Again, a one-way ANOVA was performed to establish the potential significance of the difference in action rates, and the results were significant $F(3, 298) = 2.921$, $p = < 0.01$ (see Table 5). The follow-up post hoc analysis revealed that the MOOC generated significantly higher action rates than all other formats and BLN1 was significantly higher than BLN3 and ONL. There were no significant differences between BLN3 and ONL (see Table 6).

Table 5
One-way ANOVA of Learner-Content Action Rates

	SS	df	MS	F	p
Between	8.762	3	2.921	69.558	<0.01
Within	12.512	298	0.042		
Total	21.274	301			

Table 6
Post Hoc Analysis of Access Rates

	BLN1	BLN3	ONL	MOOC
BLN1		*	*	*
BLN3	*			*
ONL	*			*
MOOC	*	*	*	

*Indicates a statistically significant difference in access rates between members of a pair at $p < .05$.

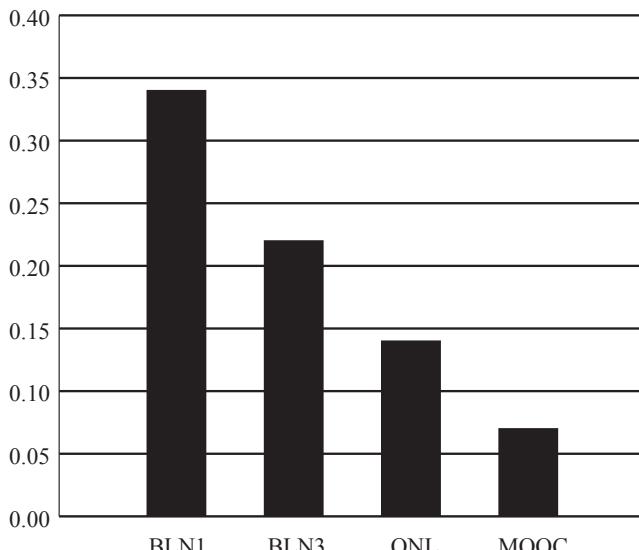
4.2 Learner-Learner Interaction

Learners were least active when engaged in interaction with other learners, but this type of interaction also showed the lowest levels of discrepancy among delivery formats. The highest levels of L-L interaction were found in the blended courses followed by ONL. The MOOC had the lowest rates of daily L-L interaction. The results are summarized in Table 7 and illustrated graphically in Figure 3.

Table 7
Learner-Learner Daily Interaction Rates per Student

Course	<i>n</i>	<i>N</i>	<i>M</i>
BLN1	72	24.48	.34
BLN3	56	12.34	.22
ONL	85	11.9	.14
MOOC	89	6.23	.07

Figure 3
Daily Learner-Learner Interaction Rates by Course



A one-way ANOVA was used to determine the significance of the differences in L-L interaction rates among the formats. The results show a significant difference in group means, $F(3, 298) = 22.047, p = < 0.01$ (see Table 8), therefore a post-hoc test was run to confirm where the differences occurred between groups. The test results indicate that both blended courses generate significantly more L-L interactions than ONL and MOOC (see Table 9). L-L interaction in BLN1 is also

significantly higher than in BLN3. There are no significant differences between ONL and MOOC.

Table 8
One-way Analysis of Variance of Learner-Learner Action Rates

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between	3.145	3	1.048	22.047	<0.01
Within	14.168	298	0.048		
Total	17.313	301			

Table 9
Post Hoc analysis of L-L Interaction

	BLN1	BLN3	ONL	MOOC
BLN1		*	*	*
BLN3		*		*
ONL		*		
MOOC	*	*		

*Indicates a statistically significant difference in access rates between members of a pair at $p <.05$.

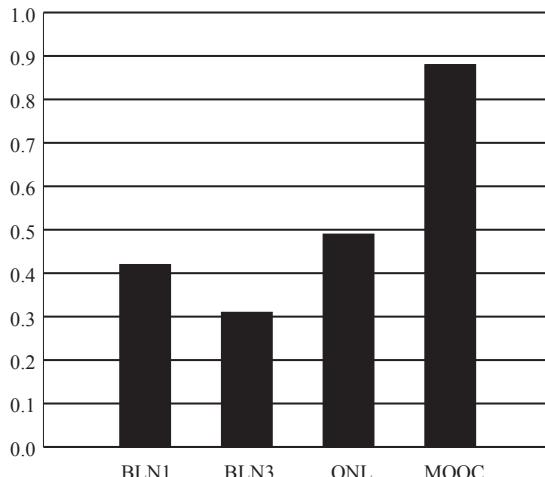
4.3 Learner-Instructor Interaction

The level of L-I interaction, illustrated in Table 10 and Figure 4, was relatively similar between the online and blended courses, but it was significantly higher in the MOOC.

Table 10
Learner-Instructor daily Interaction Rates per Student

Course	<i>n</i>	<i>N</i>	<i>M</i>
BLN1	72	30.24	.42
BLN3	56	17.36	.31
ONL	85	41.65	.49
MOOC	89	78.32	.88

Figure 4
Learner-Instructor Interaction Rates by Course



A one-way ANOVA indicated that the differences between the groups were significant, $F(3, 298) = 68.542, p = < 0.01$. The corresponding post hoc test determined that the MOOC had significantly higher rates of L-I interaction than all the other formats. The level of L-I interaction in ONL was significantly higher than in BLN3. No differences were found between ONL and BLN1 or between the two blended courses. The results of the ANOVA and post hoc tests are summarized in Tables 11 and 12, respectively.

Table 11
One-way Analysis of Variance of Learner-Instructor Action Rates

	SS	df	MS	F	p
Between	14.433	3	4.811	68.542	<0.01
Within	20.917	298	0.070		
Total	35.351	301			

Table 12
Post Hoc Analysis of L-I Interaction

	BLN1	BLN3	ONL	MOOC
BLN1				*
BLN3			*	*
ONL		*		*
MOOC	*	*	*	

*Indicates a statistically significant difference in access rates between members of a pair at $p < .05$.

4.4 Relationship Between Interaction Types and Student Success

Using the data regarding the different types of interactions in the three courses a Pearson product-moment correlation coefficient (Pearson's r) was computed to assess the relationship between the amount of each type of interaction that students engaged in and course success as measured by their final scores. There was a positive correlation between all three types of interaction and course grades, but there were important differences among the variables and also among the strength of the correlations depending on the course format. In general, Pearson's r correlations are considered negligible if they fall within the +.01 to +.19 range; weakly positive if they are between +.20 and +.29; and moderate from +.30 to +.39. Strong positive correlations return r values between +.40 and +.69. Anything equal to or higher than +.70 is considered a very strong positive correlation. Table 13 summarizes the result of the analysis of the correlation between interaction type and student success.

L-L interaction shows the weakest, often negligible, correlation with final grades, and it is only significant in the case of the MOOC. L-C interaction shows the strongest correlation with student success, particularly action rates. There is also a clear positive relationship between access rates and final grades, although it is only weak in the case of BLN1. L-I interaction also shows a generally strong correlation with student success, although BLN1 is the exception again.

Table 13

Pearson Correlations for Type of Interaction and Final Grade

Type of interaction	BLN1	BLN3	ONL	MOOC
Learner-Content				
Access	.28*	.66**	.31**	.45**
Action	.62**	.89**	.40**	.51**
Learner-Instructor	.26*	.46**	.46**	.52**
Learner-Learner	.22	.17	.14	.30*

** Significant at the 0.01 level

* Significant at the 0.05 level

Looking at the results by course there are also interesting differences. Only the MOOC shows significant correlations that are moderate to strong in all categories and at relatively uniform degrees regardless of the type of interaction. In the other three courses there are significant differences in the degree of relevance that each type of interaction has for final grades. On average, the weakest correlations are found in BLN1. The data also shows an interesting distinction between the courses that involve F2F interaction (BLN1 and BLN3) and those that do not (ONL and MOOC). In the two blended courses the strongest predictors of final grade are the two types of L-C interaction. However, in the two courses that are delivered fully online the level of L-I interaction is the best predictor of student success.

4.5 Relationship Between Instructional Format and Course Success

Course success was measured using two items included in a questionnaire distributed to students at the end of the course. The items asked students to rate their level of agreement from 1 (*strongly disagree*) to 6 (*strongly agree*) with the following two statements: “I learned a great deal in this course” and “Overall, this was an effective course”. Response rates for the questionnaire were relatively high (BLN1 = 70%; BLN3 = 64%; ONL = 71%; MOOC = 63%). Table 14 shows the average of the two responses by course. As is evident from the results, all four courses were rated positively by the students, with BLN3 and MOOC receiving very strong positive responses.

Table 14

Results of Student Questionnaire on Course Effectiveness (1-6 scale)

BLN1 (n = 36)	BLN3 (n = 42)	ONL (n = 60)	MOOC (n = 56)
5.04	5.41	4.94	5.48

In order to measure the relationship between type of instructional format and course success, a one-way ANOVA was calculated on students' ratings of overall assessment of each course. The results of the analysis were significant, $F(3, 190) = 7.558$, $p = < 0.01$, and are summarized in Table 15. Tukey HSD tests were then conducted to determine differences between all possible pairs. As Table 16 illustrates, there is no significant difference in the level of course satisfaction expressed by students in BLN3 and the MOOC. However, students in the MOOC rated the effectiveness of the course significantly higher than those in BLN1 and ONL and students in BLN3 were significantly more satisfied with the course than those in ONL.

Table 15

One-way ANOVA of Students' Assessment of the Courses

	SS	df	MS	F	p
Between	11.169	3	3.723	7.558	< 0.01
Within	93.591	190	0.493		
Total	104.760	193			

Table 16

Post Hoc Analysis of Student Survey Results

	BLN1	BLN3	ONL	MOOC
BLN1				*
BLN3			*	
ONL		*		*
MOOC	*		*	

*Indicates a statistically significant difference in effectiveness rating between members of a pair at $p < .05$.

5. Discussion and Implications

This study analyzed types of interaction in TE language courses and their relationship with course format, student success, and course effectiveness. The picture that emerges from the results does not provide a conclusive answer to our first research question regarding the correlation between course format and interaction. Although there are significant differences in how the different courses generated interaction, there is no clear pattern that can be distinctively associated with each TE format. For example, even though two of the courses follow the same blended format, there are significant differences between them in terms of L-C and L-L interaction. This finding is consistent with what was discussed in the above section on affordances. As suggested by Gibson (1997), van Lier (2000), Day and Lloyd (2007), and Withagen et al. (2012) among others, specific behaviors (interaction in our case) are not a direct result of the presence of certain affordances in the environment, but of the relationship between actors and affordances. The results of the analysis of L-L interaction in particular may be indicative of instructors' decisions made during the course design process or learners' decisions rather than inherent characteristics of the three course formats. It is evident that the blended courses generated much higher rates than the other two formats, but the cause of those increased rates is not obvious from the results of the study. One logical explanation would be that BLN1 and BLN3 are lower level language courses in which a relatively high amount of L-L interaction is seen as a necessary requirement for developing language proficiency. With that assumption, instructors and designers likely included large amounts of L-L interaction in the design of the courses. An alternative explanation would be that by having the opportunity to interact F2F, the students in the blended courses are able to create a sense of community that extends to the online environment and elicits more frequent interaction. In this case, the students as actors in the learning process would be taking advantage of a specific affordance available in their learning environment. What we can infer is that by having higher levels of online L-L interaction added to the fact that they also involve a component of F2F interaction with peers, the blended courses will likely result in much richer interactions among learners.

It also is obvious from the results of the study that the three formats made different use of the online affordances to facilitate L-I interactions. The MOOC, with its massive and low stakes nature and a very diverse student population with different goals and backgrounds, requires a stronger online teacher presence to maintain student engagement than the other two formats. The blended courses, on the other hand, can rely on the affordances provided by the physical classroom to facilitate frequent interaction between learners and with the instructor. Blended courses, therefore, show relatively low levels of this type of interaction online because it is arguably less crucial to their success. In this case, then, we could argue that instructors have made a conscious decision to utilize an affordance of the course format to facilitate the learning process.

Based on the post hoc analyses of interaction rates, a general distinction that could be drawn from the study regarding differences based on delivery format is that the two courses that do not include an F2F component—ONL and MOOC—

generate higher levels of L-I interaction, while the blended courses generate higher L-L interaction. Again, the explanation behind this difference may be in the type of affordances that all actors (designers, instructors, and students) decided to tap into based on their curricular needs. The lower level language courses seem to require more L-L interaction to facilitate language development while ONL and MOOC focused less on language development and more on the acquisition of content knowledge. This may have elicited more frequent interactions between learners and instructors as content experts.

The analysis of the data shows that L-C interaction is relatively high in all three formats, with the highest rates in BLN3 and the MOOC and the lowest in ONL. While these differences make it hard to draw conclusions that would directly answer our first research question, they may provide insights into the other two questions. Looking specifically at the relationship between interaction and students' final grades, which was our second research question, we found, as expected, that higher levels of interaction of any type directly correlate with higher grades. Interestingly, it is L-C interaction that proves to be the strongest predictor of success in a TE course with L-L being the weakest. This finding has crucial implications for course designers, particularly in light of the fact that great effort is put into making the most of online affordances to facilitate interaction among learners in online courses. As mentioned earlier, the lack of correlation between L-L interaction and student success in the blended courses needs to be interpreted carefully because there is presumably a high amount of interaction during the F2F time that is not captured in this study. The implication regarding blended courses is that building lots of L-L interaction into the online component of the course may not be necessary if enough interaction is present in the physical classroom.

The fact that L-C interaction showed the strongest correlation with success and that L-L interaction was the weakest goes counter to previous findings (Lou et al., 2006) that suggest that "media and pedagogy that support interaction with the instructor and other students are more important than media and pedagogy that are used to establish individual student interactions with content only" (p. 168).

The results of the analysis also shed some light on the nature of interaction in the MOOC. It has been argued that the pedagogical justification for this format rests to a large extent on the fact that online affordances facilitate and encourage frequent interactions that can be comparable to or, at times, richer than those typical of F2F courses. The results show that the MOOC had the most uniform levels of correlation between the different types of interaction and student success, which seems to indicate that in order to succeed in this format, learners need to be given opportunities to engage in all types of interaction. Instructor presence and action rates are particularly strong predictors in the MOOC, which coincides with Shapiro's (2013) claim that a key in the effectiveness of a MOOC is how actively it is being taught as well as the level of engagement of learners with the course (action rates in this study). It is also interesting to see that, in the MOOC, significant learning is possible even with minimal levels of engagement among learners.

To answer the third research question the study looked at the correlation between patterns of interaction and course success. BLN3 and the MOOC proved to be the most successful courses and both were significantly more successful than ONL. The MOOC's level of success was also significantly higher than that of BLN1. In order to interpret these results, it is useful to go back to the earlier discussion about Anderson's (2003a) Interaction Equivalency Theorem. His claim is that a high level of interaction of one type, even at the expense of other types of interaction, may result in effective learning experiences. The two most effective courses in this study are good illustrations of Anderson's theorem. BLN3 achieved success with a combination of a high level of L-C interaction and moderate to low levels of L-I and L-L. Similarly, the success of the MOOC was the result of high levels of L-C and L-I interactions and a very low level of L-L. Conversely, and also confirming Anderson's predictions, the least successful course, ONL, did not present high levels of interaction of any type.

6. Conclusions

Caution is necessary when interpreting the results of this study since the different courses included represent not only different delivery formats, but also different curricular levels and, especially in the case of the MOOC, a particular population with a different set of motivations. However, if one conclusion is evident based on the results of this study it is that a specific format does not correspond with a fixed pattern of interaction types and that the three different formats lead students and instructors to take advantage of different kinds of affordances in different ways. The differences among courses are probably due more to the actors' use of those affordances than to how the different formats facilitate them, which emphasizes the importance of the relationship between affordances and agency as discussed above.

Several findings from this study can provide useful insights for course designers and instructors of TE courses. One conclusion that we can draw from this study is that L-C interaction, particularly action rates, is a crucial predictor of success in all three formats. This is consistent with Hampel and Pleines (2013) finding that activities are most effective when they are well integrated into the structure of the course, particularly if they are associated with assessment. In their findings, activities that are related to assessment showed the greatest levels of participation. In our study, activities that require some action received the highest levels of attention from students and correlated strongly with students' success. Instructors and designers of TE courses should keep in mind that learners are selective when deciding which activities to engage with, and, consequently, course designs should favor the inclusion of content that requires learner action that is tied to some form of assessment. Also, as discussed earlier, instructor presence (L-I interaction) proves to be particularly relevant in the case of TE courses that do not have an F2F component. This is also a crucial finding that may have consequences for course design. Fully online courses, particularly those with very large enrollments such as MOOCs, are especially challenging to teach if their design in-

cludes high levels of interaction that needs to be monitored or assessed. If, as our findings seem to indicate, the predictions of Anderson's Equivalency Theorem are valid, these courses may be equally effective with lower levels of L-L and L-I as long as L-C interaction remains high.

Another interesting finding is that the course with the highest level of L-L interaction, BLN1, was also one of the least successful as evaluated by students. Garrison (2011) notes that there may be an optimal range of engagement necessary to guarantee effectiveness. In his view, "too little social presence may not sustain the community. On the other hand, too much social presence may inhibit disagreement and encourage surface comments and the distraction of social banter" (p. 40). Adding a high level of online L-L interaction to a course that presumably already involves strong in-class interaction did not prove to be a successful strategy.

Based on the results of our study, we have made some suggestions in this article that may help further the understanding of the nature and place of interaction in TE courses, but a full-blown account of how instructors and learners take advantage of the affordances of different teaching formats will require much more additional theoretical and empirical work. However, we believe that our findings are useful as a step towards improving the delivery and design of TE courses.

Our finding that there are no correlations between specific patterns of interaction and TE formats suggests that future research may need to focus on exploring the effects of different types of interaction regardless of the delivery format in which it is integrated. Further investigation is needed to provide empirical evidence of how different types of interactions can more effectively be facilitated by the affordances of online technologies and to understand how those interactions can be balanced in order to benefit foreign language learning in TE courses.

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Chapter 6

Face to Face, Online, or MOOC— How the Format Impacts Content, Objectives, Assignments, and Assessments

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Summary

This chapter examines the affordances of three different learning environments, face to face (F2F), online, and MOOC for learning elementary German. Examples for these different learning environments are courses that have been taught and are under development at the University of Pennsylvania. The authors describe the distinct affordances of each of these different formats and their affect on content, objectives, assignments, and assessments. In particular, the authors cite the challenges for creating and assessing interaction—essential for language learning—in MOOCs while at the same time exploring the potential positive benefits of MOOCs for learning language in a broad multicultural and globalized learning environment.

1. Introduction

1.1 Background

Regardless of whether we teach in face-to-face (F2F) classrooms, hybrid courses, completely online credit courses or Massive Open Online Courses (MOOCs), the proficiency goals we set for our students need not change; what changes are the affordances of these different learning environments that can help students attain them. In turn, the different technological formats we use impact content, objectives, assignments, and assessments. We cannot simply ‘translate’ course content to online formats but need to reconsider our instructional approach and reorganize content, materials, assignments, and assessments (e.g., Meskill & Anthony, 2010). For instance, Nielson (2014) stresses that changing the format from F2F to online for college-level Chinese learners had an impact on learning outcomes because additional subtasks necessary for the online version skewed the results. A role play task in a restaurant was changed to a phone-based online food order role play with additional subtasks (e.g., specifying a time in the future for the order and answering clarification questions regarding the order).

Recently, Chapelle (2014) has emphasized the importance of adhering to the evaluation criteria in her 2001 SLA-informed, task-based evaluation framework (language learning potential, learner fit, meaning focus, authenticity, positive impact, and practicality). She stresses that the field has been unable to “develop capacity for critical analysis of the affordances of technology, needs of language learners, and opportunities missed when technology is selected” (p. 329). The jobs of innovators are much more complex today due to the cross-disciplinary knowledge required in many areas of applied linguistics and technology. Thus, Chapelle (2014) calls for a programmatic approach to technology-mediated task-based language teaching (TBLT) planning, which includes implementing needs analyses, identifying learning outcomes, designing tasks, and planning assessments and evaluations.

A look at the literature on comparing proficiency outcomes in F2F and online environments shows either support for the latter or no significant difference. For instance, the quantity and characteristics of the discourse produced by second-semester French students during an online session and an oral class discussion on the same topic found that students had over twice as many turns, produced two to four times more sentences, and used a much greater variety of discourse functions when working online (Kern, 1996). Another early study comparing F2F and electronic discussions found that English learners used more complex and formal language in the electronic discussions, and that this might have been beneficial to all the students, since it could assist them in acquiring more sophisticated communicative skills (Warschauer, 1996). Payne and Whitney (2002) found that L2 oral proficiency of third-semester Spanish learners in the synchronous computer-mediated communication (SCMC) group scored higher than those in the F2F group. Fitze (2006) showed statistically significant findings of increased lexical range in written electronic conferences when comparing F2F and online ESL learners. Oral proficiency outcomes were also comparable in a first-year language course offered at the University of California, Davis in distance, F2F, and blended formats (Blake, Wilson, Cetto, and Pardo-Ballester, 2008). A recent study comparing learning outcomes for beginning Spanish learners in hybrid and F2F courses found no significant difference (Isabelli, 2013).

The research on language learning outcomes in MOOCs, on the other hand, is still in its infancy (see Colpaert, 2015). The affordances of this new learning environment that opens up language courses to participants outside an institution and across cultures needs to be taken into account (Godwin-Jones, 2012). In a similar vein, González-Lloret and Ortega (2014) have emphasized the need for future lines of research that move beyond solely cognitive approaches (e.g., task complexity and task sequencing in technology) to more sociocultural and intercultural approaches. While this shift itself is not new, it has profound implications for teaching and assessing language learning proficiency in the MOOC format. By the same token, target language interaction, a necessary condition for language learning (Egbert, Hanson-Smith, & Chao, 2007), poses an unprecedented challenge when involving potentially hundreds of thousands of students. This holds true also for peer-to-peer assessments in the absence of learner training, as has

been shown in nonlanguage MOOCs such as the Metaliteracy Coursera course developed by SUNY Empire State College (Mackey, Forte, Stone, 2015). One can expect this challenge to be intensified in elementary language MOOCs due to the low language proficiency of students. One way to mitigate this could be the use of digital badges as motivators for students to stay in the course and to engage with others. Drawing on Cross and Galley's (2012) typology of badges, Hauck and MacKinnon (in press) have suggested the use of a three-tiered "soft certification badge system" to assess online intercultural exchanges. The authors demonstrate how digital badges lend themselves to task-based intercultural exchanges by mapping them against O'Dowd and Ware's (2009) taxonomy of tasks.

Against the backdrop of these new trends and challenges, our present contribution focuses on how these components—content, objectives, assignments, and assessments—can be impacted by three different formats, namely F2F, online, and MOOC, to measure beginning-level German language proficiency.

To illustrate the three different formats for delivering elementary-level German classes, we will draw on examples from three different courses (which were all taught or will be taught at the University of Pennsylvania). We summarize the courses here.

1. F2F: GERMAN 101 and 102 (2002-2013); average student enrollment per class: 10 to 18
2. Online: GERMAN 101 and 102 (taught in the summer 2010-2014); average student enrollment per class: 3 to 9
3. MOOC: *Auf Deutsch: Communicating across Cultures* (TBA); massive enrollment expected

All three learning formats—F2F, online, and MOOC—attempted to employ practices and strategies that seek to lead students to achieving the goals defined in the World Readiness Standards for Learning Languages, i.e., *Communication, Cultures, Connections, Comparisons and Communities* (National Standards, 2015). All three formats were designed to provide learners the opportunity to participate in interpersonal communication; interpret what is heard, read, and viewed on a variety of topics; and present information on themselves to an audience of listeners and readers. In this way, students can become aware of other learners' world views and learn language as an expression of cultural perspectives which, as Cutschall (2012) explains, is essential for students to learn in order for them to relate, better understand, and effectively communicate with peoples from different cultural backgrounds. The insights into another culture also provide students with the means to make comparisons with their own culture and with the different cultures of people from around the world (Kramsch, 1993). Studying a foreign language in these contexts also connects students to other disciplines by addressing themes related to global issues and challenges such as immigration, contemporary families and communities, and the environment and green ecology.

We would like to emphasize that it is in the MOOC that *Communities* can stand out as playing an important, if not crucial, role in developing both the students' language competency and cultural awareness. In the MOOC, students have the

affordances to participate in multilingual, multicultural, and multiracial communities. White (this volume) draws attention to the fifth Standard, *Communities*, what has been frequently referred to as the “the lost C.” She underscores the overarching importance of *Communities* in a learner’s language development and its potential to affect the realization of the goals set by the other standards. In the MOOC, we attempt to set up content, objectives, assignments, and assessments in a way that allows for new learner behaviors to develop as a result of social interaction with participants in an online globalized community. It is to be hoped that such new learning behaviors in the MOOC evolve and impact motivation, produce increased social interaction, and result in increased usage of the target language.

Before turning to a more in-depth discussion of the MOOC format, we outline the nature of the elementary 2-semester F2F sequence, the elementary 2-session online sequence in summer, and the 6-week MOOC and their delivery formats. Table 1 reflects selected proficiency goals for students at the elementary level organized by skill and which are common to all three formats.

Table 1
Elementary German in Three Different Formats

	F2F: Elementary German 101 & 102	Online: Elementary German 101 & 102	MOOC: Elementary German <i>Auf Deutsch</i>
Course Goal	Prepare students for next level of language instruction and foster an interest in continued language study	Same as F2F	Pique students’ interest in German language and culture and foster an interest in continued language study
Receptive Skills (Reading)			
	FTF	Online	MOOC
Content	<i>Kontakte</i> course book—texts combined with authentic literary texts	Self-paced online learning program <i>Deutsch Interaktiv</i> by Deutsche Welle	Adapted from internet, authored by course instructors
Objectives	Students will be able to understand short simple messages and descriptions related to everyday life; understand the main idea in authentic materials; and acquire skimming reading strategies.	Same as F2F	Same as F2F & Online
Assignment	Reading comprehension questions Chapter quizzes Final	Reading comprehension questions	Reading comprehension questions
Assessment	Formative and summative	Formative and summative	Formative

Receptive Skills (Listening)			
	F2F	Online	MOOC
Content	<i>Kontakte</i> CDs combined with authentic film and TV materials	Self-paced online learning program <i>Deutsch Interaktiv</i> by Deutsche Welle	Adapted from internet, authored by course instructors
Objectives	Students will be able to understand simple questions or statements on familiar topics; understand the main topic of what is being said.	Same as F2F	Same as F2F & Online
Assignment	Listening comprehension questions	Same as F2F	Same as F2F & Online
Assessment	Formative and summative (chapter quizzes)	Formative and summative	Formative
Productive Skills (Speaking)			
	FTF	Online	MOOC
Objectives	Students will be able to use adjectives, simple word order, pronoun/verb agreement, present and past tense to present themselves; describe familiar people and places, list daily activities, and express likes and dislikes; and handle short social interactions in everyday situations by asking and answering simple questions.	Same as F2F	Same as F2F & Online without past tense
Assignment	<ol style="list-style-type: none"> 1. Synchronous in-class plenary sessions and group work with the instructor 2. Practice interviews 3. Exit interview 4. Asynchronous Q&A, short posts and presentations in Wimba Voice Board 	<ol style="list-style-type: none"> 1. Synchronous online plenary sessions and groups work with the instructor 2. Practice interviews 3. Exit interview 4. Asynchronous Q&A, short posts and presentations in Wimba Voice Board 	<ol style="list-style-type: none"> 1. Synchronous Skype sessions organized by students without the instructor 2. Asynchronous Q&A, short posts and presentations in VoiceThread
Assessment	Formative and summative	Formative and summative	Formative

Productive Skills (Writing)			
	FTF	Online	MOOC
Objectives	Students will be able to use adjectives, simple word order, pronoun/verb agreement, present and past tense to present themselves; and describe familiar people and places, list daily activities, express likes and dislikes related to everyday life.	Same as F2F	Same as F2F & Online, without the past tense
Assignment	Essays in threaded Blackboard discussions Facebook posts Chapter quizzes	Essays in threaded Blackboard discussions Facebook posts	Same as Online
Assessment	Formative and summative	Formative and summative	Formative

2. F2F Course: GERMAN 101 & 102

2.1 Content and Objectives

The goal of the F2F course was to prepare learners to enter the next level of language instruction. Specific linguistic objectives were based on A1/A2/A3/B1 or ACTFL Novice (Low/Medium/High) and Intermediate (Low). The primary materials for the course came from the textbook, workbook, and CDs from *Kontakte*. Additional readings and listening materials were drawn from authentic sources including short literary pieces and listening excerpts from film and TV programs such as soap operas.

Blackboard served as the primary course platform for posting materials and for threaded discussions. Additionally, Facebook was used to encourage peer-to-peer out-of-class communication.

2.2 Assignments and Assessments

2.2.1 Receptive skills. With regard to listening skills in the F2F class, assignments focused on student comprehension of spoken questions on familiar topics mainly related to everyday life from the textbook. Reading skills assignments comprised passages from *Kontakte* on useful cultural information and authentic short literary texts. Students were also assigned additional readings and listening assignments in the form of longer authentic pieces, for example, the children's story *Die Lisa* and an episode from the German soap *Lena*. They practiced skimming reading strategies for understanding the gist of the reading text *Die Lisa*.

Summative assessment procedures—chapter tests and a final—were used to evaluate the students' learning with regard to both skills. More specifically, listening comprehension was assessed through plenary sessions with the instructor, through in-class student participation in group work, and in the final interview with the instructor.

Assessment of student comprehension of authentic reading and listening texts were generally low stakes, primarily formative and based on student written and spoken responses to prompts in additional online assignments. Since the assessment of the students' reading and listening skills were closely intertwined with and dependent on the assessment of their speaking and writing skills, we will discuss these assessments in the following section on productive skills.

2.2.2 Productive skills. With regard to speaking, assignments included interpretive, interpersonal, and presentational assignments. During in-class interaction with the instructor, in-class group work, and an exit oral interview, students demonstrated their competency to speak with linguistic accuracy, express themselves within the context of familiar everyday topics and to use language creatively. In addition to these high-stake summative assessments of graded assignments, low-stake assessments of assignments for extra practice were added for evaluating the students' spoken presentational skills on familiar topics. In addition to answering questions about their daily lives, students were also asked questions about content from the authentic readings and listening pieces. By engaging with authentic content through speaking, students demonstrated their comprehension of the texts (e.g., *die Lisa*) and their ability to communicate their understanding. In these extra assignments, students recorded their responses to the instructor's spoken questions in open-ended answers on Wimba Voice Board. Students completed these extra assignments outside of class.

Although the extra assignments were not scored or assigned a numeric or letter grade, they were required as a homework assignment. They were evaluated mainly for their communicative value and designed to help the instructor to identify problems the students were having in the area of self-expression and also in their reading and listening comprehension. Upon identifying problems that most students were encountering with regards to, for example, incorrect word order in self-expression assignments or misreadings of authentic texts, the instructor developed feedback to alert them to their errors and provided strategies for helping them improve their comprehension through skimming and listening for meaning. The instructor provided formative feedback to the students during regularly scheduled F2F meetings.

Students' writing was likewise evaluated through summative assessments in the form of chapter tests, final exams, and written essays. The in-class chapter quizzes and the final exam tested students on discrete vocabulary and grammar items associated with writing production (e.g., present tense verb forms, pronoun/verb agreement, and simple word order) and included a short essay section to evaluate their spontaneity and ability to use language creatively. In addition to the tests and final exam, students wrote lengthier out-of-class essay assignments. These longer essays provided more comprehensive writing samples for assessing students' pragmatic ability to describe themselves within the context of topics covered in the textbook related to the family, professions, nutrition, daily routines, likes and dislikes, and so forth. Students posted their essay assignments in threaded discussions on Blackboard in which the instructor provided feedback in the form of

written comments that focused on linguistic accuracy and self-expression. Students were then required to take note of their errors and self-correct.

Writing was also measured through low-stake assessments involving extra out-of-class Facebook posts in which students used social media to practice presenting themselves within the context of course topics. In addition to the instructor using the comment feature in Facebook to either ‘like’ or provide commentary to the students’ posts, students were also encouraged to engage with each other’s posts and make comments. The instructor followed up on student posts during in-class sessions and provided general feedback on the recurring errors made by most students related to incorrect word order, wrong verb endings, and inappropriate usage of vocabulary. These additional writing assignments on Facebook were not assigned a point value and students were not required to self-correct.

As was the case with speaking, writing was also a means to assess the students comprehension of authentic reading and listening materials. In threaded discussions and open-ended questions in Blackboard’s quizzes, students responded to questions from the instructor and used their writing skills to communicate their comprehension of the texts. These written assignments were assessed in much the same way as the students’ spoken posts. They were used to demonstrate the students’ understanding of authentic reading and listening materials.

3. Online Course: GERMAN 101 & 102

3.1 Content and Objectives

The goal of the online courses was the same as in the F2F courses, that is, to prepare learners to enter the next level of language instruction at the intermediate level. Specific linguistic objectives were based on A1/A2/A3/B1 or ACTFL Novice (Low/Medium/High) and Intermediate (Low)

As in the F2F class, Blackboard served as the primary course platform for posting materials and for threaded discussions. Additionally, Facebook was used to encourage peer-to-peer out of class communication. Synchronous communication took place via the web conferencing tool Adobe Connect.

3.2 Assignments and Assessments

3.2.1 Receptive skills. As indicated in Table 1 above, with regard to reading and listening skills in the online course, assignments aimed at engaging students with materials from the self-paced online learning program *Deutsch Interaktiv* by Deutsche Welle. This program provided students with feedback to their responses in reading and listening comprehension exercises immediately following each and every reading and listening presentation. The feedback allowed the students to evaluate, on their own cognizance, their reading and listening comprehension skills. Quiz results were not tallied into the grade, but students were encouraged to repeat the quizzes multiple times until attaining a perfect score.

Just as in the F2F class, additional readings and listening materials were drawn from authentic sources including longer readings (*Die Lisa*) and listening excerpts from film and TV programs (*Lena*). Assessment of the students’ comprehension

of these texts were completed in much the same way they were assessed in the F2F class, by evaluating the students' written and spoken open-ended responses to the instructor's questions in online quizzes, threaded discussions, Wimba Voice Board, and Facebook.

These assignments were completed out of class and were instrumental in helping the instructor identify problem areas in the students' reading and listening comprehension and to develop feedback in the form of strategies for helping them improve comprehension through skimming and listening for meaning. Follow-up feedback was provided by the instructor to the students during regularly scheduled live sessions in Adobe Connect.

3.2.2 Productive skills. With regard to speaking and writing skills, as in the F2F course, assignments focused on interpreting content, interacting with the instructor and peers, and on presenting personal profiles.

Students demonstrated their speaking abilities during synchronous plenary sessions and group work and in a final oral interview. All synchronous meetings occurred in Adobe Connect. Furthermore, two additional oral assessments in the form of practice interviews were added at the beginning of each course and at the mid-term. These practice interviews were included to better monitor the students' progress and prepare them for the exit interview. As was the case with the interview in the F2F class, the online interviews were assessed for pragmatic competence, accuracy and fluency, correct grammar usage, breadth of vocabulary usage, and pronunciation. In addition to synchronous oral assessments, the instructor prepared asynchronous oral assessments with VoiceThread for students to practice vocabulary, grammar, and topics they might encounter in the interviews.

However, since summative assessment procedures could not be proctored in the online class as they were in the F2F class, where the instructor was able to oversee and monitor students taking the tests and exams, chapter quizzes were eliminated and replaced with additional writing and speaking assignments in Wimba Voice Board, and threaded discussions in Blackboard and posts on Facebook. These assignments were designed and completed in much the same way they were in the F2F class. The procedures used to assess them were both summative and formative. As high-stake assignments, the essays, interviews, and Wimba Voice Board were assigned a point value that figured into the students' final grade. Unlike the quizzes and the final exam in the F2F class that tested the students' understanding of grammar and vocabulary as separate competencies, students in the online course were assessed on their ability in the written and spoken posts to synthesize their learning and appropriately use both grammar and vocabulary to present their profiles accurately and coherently within the context of topics similar to those covered in the F2F class (e.g., family, professions, nutrition, daily routines, and likes and dislikes). For all of these assignments, students received both individual commentary and general feedback on their main and recurring errors whereupon they were then required to search for their errors and self-correct.

The additional use of computer-mediated communication tools and social media in the F2F courses and the dependency of the online courses on social networks to determine the students' proficiency, helped to transform assignments

that were formally completed and intended for the instructor, into collaborative assignments in which students read, heard, and/or commented on each other's posts. Because the course was online, students were encouraged to write for the larger audience of their peers and follow each other's posts in written threaded discussions, VoiceThread, and on Facebook. In this way, even essays traditionally intended for the instructor became a means for students to present themselves to their peers, make comments, and to pose questions to each other.

All oral interviews in the online courses provided a means to assess the students' linguistic competency and their pragmatic ability to describe themselves within the context of topics that were similarly covered in the F2F courses related to, for example, family and friends, daily routines, likes and dislikes, professions and talents.

4. MOOC: *Auf Deutsch*

4.1 Content and Objectives

The MOOC *Auf Deutsch: Communicating in German across Cultures* (designed at the University of Pennsylvania and to run on the Coursera platform) is planned as a noncredit, experimental course for developing intercultural awareness through language learning. The course provides beginning-level learners of German with an interactive format for language and intercultural learning through peer-to-peer interaction, a crucial aspect in L2 learning. In addition to peer-to-peer interactions and in an attempt to optimize opportunities for the students to experience authentic language usage, native speakers of German are invited to participate in the exchanges. Based on the principle of reciprocity, native speakers of German will be able to share with learners from across the globe their language and culture as well as take advantage of learning about the languages and cultures of others. Connecting and learning with native speakers of German in mutual exchanges of language and culture is a goal for both during and beyond the duration of the course.

With some modifications, the objectives of *Auf Deutsch* aspire to the same proficiency objectives of F2F and online classes and fall in the range of A1/A2/A3 or ACTFL Novice (Low/Medium/High). However, the MOOC does not aim at preparing learners for the next level of language instruction. Although the linguistic goals of the MOOC are in many respects similar to those of the F2F and online courses, it also seeks to explore and take advantage of the affordances of MOOCs to teach and learn language and culture in new and innovative ways through community building in a world-wide context. The MOOC includes a heavier focus on intercultural communication due to the potential of peer-to-peer interaction by a massive number of learners. All content was authored by the teaching team. Themes were borrowed largely from the F2F and online courses. In the MOOC, authentic content from internet sources such as [deutschland.de \(https://www.deutschland.de/de\)](https://www.deutschland.de/de) and official websites for German cities and celebrities was customized and didacticized for the beginning student. As in the F2F and online courses, topics focus on family, professions, nutrition, daily routines, and likes and dislikes.

4.2 Assignments and Assessments

4.2.1 Receptive skills. *Auf Deutsch* reading and listening content concentrates on providing some basic insights into German everyday life and habits, the lives of familiar German celebrities, major German cities and contemporary social issues. Assessments are low-stakes and involve computerized comprehension checks through which students receive immediate feedback to their answers in multiple choice reading and listening questions. As in the online course, students can take the quizzes as often as they choose or until they get a perfect score. No grade is assigned to the results. Instead, the feedback is intended to help students realize their errors and develop a better understanding of the reading and listening comprehension materials.

4.2.2 Productive skills. Students practice speaking by recording their answers to questions posed by the instructor in the instructional videos on topics pertaining to the learners' backgrounds, professions, hobbies, and so on. This kind of asynchronous interaction between the instructor in the videos and the learner in the VoiceThread provides learners with models they can reference when preparing and practicing live synchronous conversations with their peers in, for example, Skype or Google Hangouts. With regard to developing the learner's writing skills, the instructors provide learners with models for presentational writing which they can then mimic in threaded discussion. One goal of the threaded discussions is for learners to read and comment on each other's posts and find commonalities or mutual interests that lead them to connecting with each other via Google Chats or Skype. Unlike the F2F and online courses in which the instructor can assign partners, schedule times, and monitor the student interactions, the learners in the MOOC will be responsible for their own collaborations and contacts.

Speaking and writing skills are assessed through the students' ability to report on their interactions with each other in a final project. In this project, students write about themselves and what they learned about each other in both written and spoken modes of online interaction. Prior to their final projects, learners receive ongoing feedback to their written and spoken assignments in the form of global feedback that will address the learners' most common recurring mistakes. Learners are then expected to re-read and re-listen to their posts, search for errors and self-correct. The purpose of the feedback is not only to make learners aware of their errors in a particular assignment but also to help them identify their strengths and weaknesses with regards to linguistic accuracy and expression in subsequent assignments and particularly when composing their final report. Furthermore, using the portrayals of German cities and celebrities in the MOOC as models, students will be expected to skim for information on the web about a city and famous person in their culture and summarize them in their final report.

5. Discussion

5.1 F2F and Online Formats

The use of social media in both the F2F and online course transformed an assignment such as an essay that was formally completed for the instructor into

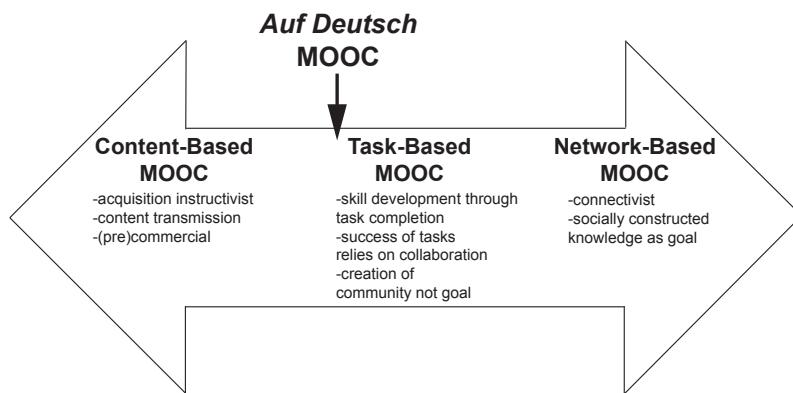
a collaborative assignment that required students to read and comment on each other's work. In this way, students used their essays to present themselves to their peers and to pose questions to them to seek additional information about them. Due to the increased amount of student output in especially the online course, the instructor was often unable to address each individual error. Hence, student writing was assessed initially globally for linguistic accuracy, content, and ability to communicate. Upon receiving feedback from the instructor on their recurring errors, students were required to search their errors and self-correct.

However, despite their commonalities, the emphasis in the online course shifted from assessing the students mastery of textbook content to assessing their competency in using the language to communicate accurately and effectively on topics related to their everyday lives. Student feedback suggested a high level of satisfaction with their learning in the online environment (Dixon & Hondo, 2013), and three students from the Online 102 courses transitioned without difficulty to the intermediate-level courses in F2F classes and completed the courses successfully.

5.2 The MOOC Format

The MOOC course *Auf Deutsch*, in its current format, shares characteristics of the content-based and task-based MOOC models (see Figure 1). Ideally, a focus on socially constructed knowledge and community creation situates MOOCs on the network-based end of the continuum (see also Moreira Teixeira & Mota, 2014; Rubio, this volume). By the same token, this shift presents challenges not only for changing the objectives and selecting content of the course, but also for promoting peer-to-peer interaction and for assessing language learning outcomes.

Figure 1
Situating the MOOC *Auf Deutsch*



Note. Adapted from Beaven, Hauck, Comas-Quinn, Lewis, and de los Arcos (2014, p. 33)

In the MOOC, students interact with each other with the same communicative goals that are found in both the F2F and online classes. However, because of the

high number of student enrollments that average into the thousands and because of the diverse nature of such a target student population, objectives were modified in order to avoid a content-based model that is limited to teaching to the test.

The nature of the assignments also had to change in light of the massive number of students, which effectively limits learner interaction with the instructor to asynchronous communication. Consequently, speaking and writing assignments require learners to connect with other learners and to interact with each other both asynchronously through VoiceThread and other social media like Twitter and Facebook and synchronously through Google Chats, Hangouts, and Skype.

In a similar vein, in the absence of closely monitored teacher-student interactions in a MOOC, course content and assignments need to be not just informative but also capable of stimulating and maintaining the students' interest in engaging in spoken and written exchanges about the topics. In her study of interactions in threaded discussions between Irish undergraduate students and native speakers of French, Batardière (this volume) reports that the issues which students reflected on were relevant, contemporary, and provocative enough to provoke conversations that challenged their cultural viewpoints and led many to change them. In this way, the topics in Batardière were central to sustaining intercultural online communication, which is precisely a major goal of the MOOC.

Through fair-use policies, the instructor was able to provide students in the F2F and online courses limited access to authentic content without infringing upon copyright. However, copyright prohibited the use of authentic materials in the MOOC on Coursera, a for-profit enterprise. Hence, instructors authored content by drawing upon commonplace information about (a) everyday life in German-speaking countries; (b) prominent German-speaking celebrities in the arts, politics, and sports; (c) social issues such as the environment and new eating trends; and (d) major cities in the German-speaking world. For example, the section on everyday life in Germany is represented by avatars whose life styles and backgrounds are culturally identifiable, contemporary, and realistic. The sections on Germans in everyday life, prominent German figures, social issues, and cities are repeated in each of the five units and are thematically related to each unit's main topic.

The semiauthentic content in the MOOC serves a twofold purpose. Firstly, it provides beginner students with comprehensible autobiographical and biographical models that they can mimic when developing their own profiles and describing their cities and the people who interest them. Secondly, it gives them commonplace vocabulary and structures that they will encounter in authentic texts, primarily web-based, when they research information about people, places and things for their assignments and projects. It is expected that the numerous examples of German cities and celebrities in *Auf Deutsch* will serve the students as models that they can reference when they search and skim for information about their subjects. Unlike the F2F and online course, the instructor in the MOOC will not assign authentic content to students. Instead, the students will search and choose their own.

5.2.1 Peer-to-peer interaction and assessment. In the MOOC, students can practice speaking and writing through peer-to-peer interaction in social networks both synchronously and asynchronously with Skype, Google Hangouts, and Google Chats (synchronous interaction) and Twitter and Facebook (asynchronous interaction). Using social networks, students can connect and interact with each other through speaking and writing in self-selected groups that coalesce around common interests discovered by reading each other's profiles in the threaded discussions in Coursera. Since, however, in most cases, students will be using their personal social networks to interact with each other, instructors will not be able to access and therefore unable to directly assess these interactions. However, students will report on their interactions with each other in their final projects and submit them for assessment.

Peer-to-peer interactions and assessments pose challenges that go beyond most nonlanguage MOOCs (Mackey et al., 2015) due to the low language proficiency to be expected in a beginning-level language MOOC. However, because of the large enrollment numbers that reach into the thousands, instructors will need to share the burden of assessment with the learners. As Rubio, Fuchs, and Dixon (in press) point out, the overlapping roles of teacher and student are entirely compatible with the philosophy of a connectivist MOOC. Learners can be instructed on how to assess each other using, for example, modified versions of ACTFL's Can-Do statements as rubrics or benchmarks. These Can-Do statements can be customized to fit the objectives of a specific task.

Another possible avenue could be an adapted form of the digital badges for online intercultural exchanges as proposed by Hauck and MacKinnon (in press). This system could aid in countering the high drop-out rate for MOOCs because of the motivational impact of badges. As for the actual assignments, Type I badges are assigned for passing traditional benchmarks such as quizzes or some other sort of endpoint. Type II badges are for a cumulative accomplishment that rewards the effort a learner has invested. Type III badges are awarded for performing additional, optional activities (Cross & Galley, 2012).

Although O'Dowd and Ware's (2009) typology is based on telecollaborative formats, that is, more structured online interactions across institutions for the purpose of language study and intercultural learning, *Auf Deutsch* lends itself to partial adaptation with regard to the information exchange and comparison and analysis tasks. With regard to the actual assignments, the information exchanges in the MOOC entail students learning about each other and the cultural contexts in which they live. For the comparison and analysis task, learners compare their different cultural contexts. More complex collaborative tasks may not be feasible in a beginning-level language MOOC due to proficiency issues. In terms of badging, this means that in addition to Type I badges for completing quizzes, Type II badges could be awarded for making an effort to participate via the social networking tools in the required tasks. Finally, Type III badges could be reserved for those students initiating exchanges and interactions that go beyond course requirements (e.g., an exchange on a cultural topic with one of the native speakers in the MOOC).

6. Conclusion

We set out to explore how three different learning formats, namely F2F, Online, and MOOC, impact course content, objectives, assignments, and assessments in elementary German courses. For example, F2F assessment procedures which treat grammatical and lexical items as separate skills in chapter tests and final exams are integrated in the online and MOOC courses in tasks that demonstrate the students' communicative competency to use both coherently and accurately. Communication as the foremost objective in the F2F and online courses is appropriated in the MOOC by community building through which communication between students is made possible. Engagement with authentic content is provided in the F2F and online courses by the instructor, whereas students in the MOOC must self-initiate searches for authentic content to complete their projects. Furthermore, in the F2F and online courses where the instructor often initiates partner and group work, such collaborations are self-initiated by the learners in the MOOC.

Different technological environments afford different assessment mechanisms because of changes in interactional patterns. While instructors in F2F and online classes can assess speaking in real time and intervene directly in learner interactions, instructors in MOOCs must rely on learners to connect with each other outside of class and record their interactions for later evaluation of their listening comprehension and speaking skills. MOOCs, however, open up new avenues due to the potential of authentic interaction by a large number of German native speakers and nonnative speakers. In order to take advantage of this affordance, the focus should shift from content-based and task-based to a network-based format. This means that traditional beginning-level German assessments need to make way for less cookie-cutter types of assessments, or else the MOOC might as well be assessed like a self-study course. The implications for language MOOC assessments are yet to be explored. While an adapted badging system looks viable and promising for the MOOC, issues of standardization and transferability of these soft skills still need to be addressed.

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Chapter 7

Video Creation Tools for Language Learning: Lessons Learned

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Summary

Video creation tools—from Skype to PowerPoint to iMovie—have become increasingly popular conduits for foreign language teaching and learning. In flipped-classroom and blended-learning models, video enables faculty to move routine language concepts (i.e., grammar and vocabulary) outside the classroom, leaving more in-class time for live engagement with teacher and classmates. This chapter discusses lessons learned and new data collected at the University of Pennsylvania Libraries’ Weigle Information Commons on video’s effectiveness in various language learning contexts. Data collected includes reflections on several years of course observations, interviews with language faculty members, and a campus-wide survey to gauge student perspectives on video’s role in the language learning experience. Themes that have emerged include the range of video tools available to perform a given task, perceptions of tool usefulness and ease of use (depending on faculty and student technology comfort levels), and the role of the library as a central resource for technology support and course integration. Our study contributes to the scholarly conversation by providing a taxonomy of current tools used, their efficacy in our context as a measure for other contexts, and skills recommended by faculty and staff for effective incorporation of video tools in the language classroom.

1. Introduction

Video creation software tools (Skype, YouTube, iMovie, PowerPoint, ScreenFlow, and more) provide powerful mechanisms for collaborative and interactive learning in college-level language courses (Djiwandono, 2013; Shih, 2010; Truong & Tran, 2013; Zorko, 2009; Brünner, 2013; Jauregi, de Graaff, van den Bergh, & Kriz, 2012). Students can video-chat live with language speakers across the globe, critique their own or their classmates’ speaking abilities screen-to-screen, focus on nonverbal communication and explore language-learning materials in a

flipped-classroom structure. Video technologies enable faculty to design instructional activities customized to improve language learning (Shih, 2010; Brünner, 2013).

Adding live video interaction during class energizes the classroom atmosphere and increases student engagement with content (Jauregi et al., 2012; Truong & Tran, 2013). Moving routine language mechanics such as vocabulary and grammar to “screen videos” that are delivered outside of class (via courseware or YouTube) frees up in-class time for collaborations with teacher and classmates (Brünner, 2013; Djiwandono, 2013). At the University of Pennsylvania, the Penn Libraries’ Weigle Information Commons partners with several campus entities to support language faculty as they explore ways to incorporate video and screen capture software into coursework (Vedantham & Hassen, 2011).

This chapter will summarize lessons learned from past practice of these tools and explore new data collected from course observations, interviews with language faculty, and student survey comments. Specifically, we discuss results from two course observations, individual interviews with six language educators, a campus-wide student survey ($N = 57$) and an annual faculty symposium regarding student and faculty insights about video tools in the context of language learning. Tools such as the voice-over narration function in Microsoft PowerPoint are simple to learn and integrate well with courseware systems such as Instructure’s Canvas. Software such as iMovie and ScreenFlow can have a learning curve but also greater capability for enhancing student engagement. Hardware, facilities and staff training support (including general workshops and class-specific tutorials) also influence effectiveness of the integration of available software. We propose a simple taxonomy of current tools and an exploration of their efficacy in our context. Instructor responses to using digital video in class have been positive. As theoretical points of departure, we discuss flipped-classroom and hybrid-learning methodologies, the Technology Acceptance Model (TAM; Davis, 1989), and the perspectives of both faculty and students regarding usefulness of video in language learning.

2. Penn Context

The University of Pennsylvania (Penn) is an Ivy League university in an urban setting. Penn has twelve schools, including four that grant undergraduate degrees: the School (College) of Arts & Sciences, the School of Engineering and Applied Science, the Wharton School, and the School of Nursing. Penn offers instruction in over 50 languages, including Arabic, Chinese, and Dutch, to name only a few (University of Pennsylvania College of Arts & Sciences, 2014). The Penn Language Center (PLC) is a division of the School of Arts & Sciences that supports language education and the development of language professionals. In addition to offering less commonly taught languages, such as Irish Gaelic, Persian, and American Sign Language, the PLC explores trends in online instruction according to national standards (Penn Language Center, 2014a).

Penn’s twelve schools are scattered around its 300-acre University City campus, and Penn provides fourteen libraries to serve specialized populations of re-

searchers. Because of Penn's decentralized structure, it can be difficult for faculty to locate and access instructional support resources, especially those outside of one's home department or school. In addition to support from the PLC, language educators often require access to classrooms with computers to accommodate each student, equipment for audio and video recording, and assistance with classroom technology or borrowed equipment. Several places on campus provide technology support and loan equipment to support language learning, including the School of Arts & Sciences' Multi-Media Services.

Within Penn Libraries, there are also many ways to reserve equipment and teaching and learning spaces. The Weigle Information Commons (WIC), located on the first floor of Van Pelt-Dietrich Library Center, was founded in 2006 as one of the country's first Commons—a bookless area with technology-enhanced collaboration spaces. The WIC has a Seminar Room that seats 35, with access to 20 MacBook Pros in addition to a ceiling camera and PC and Mac projection options; 12 Data Diner Booths with desktop and laptop PCs; several group study rooms with high-definition video cameras for recording presentations and interviews; and several rooms with large-screen iMacs and wireless keyboards and track pads for Google Hangouts or Skype sessions. Located at the end of the WIC is the Vitale Digital Media Lab, a self-service space for digital project work. Lab staff members are available to assist users with specific hardware and software questions; the space is equipped with a large-format poster printer, slide scanner, and an equipment rack for older media conversion (e.g., VHS and cassettes). Individuals can borrow equipment, from video cameras to audio recorders to projectors, for three days at a time with their Penn ID card. The WIC also provides Lynda.com licenses to students, faculty, and staff for self-paced online learning.

Many language faculty members take advantage of the resources at WIC for their own professional development and to enhance their teaching. WIC recently partnered with the PLC to offer technology workshops as part of the PLC's Certificate in Instructional Technologies and Online Learning for language educators (Penn Language Center, 2014b). WIC staff members provide regular instruction to classes working on online, video, or audio projects with software and programs such as Audacity, iMovie, QuickTime Player, Snapz Pro, Final Cut Pro, PowerPoint (voice-over and audio), Skype, YouTube, and Google Hangouts, and on hardware including iOS devices (apps for iPad and iPhone), video cameras, and audio recorders. With staff members who are educators, librarians, scholars, and artists themselves, WIC has a diverse staffing model.

A resource that opened in 2014 in Van Pelt Library between the WIC and the Reference area is the Collaborative Classroom, an active learning classroom. The room seats 30 students at five round tables, all with laptop connections and projection screens. Instructors can control each table's video and audio via a control panel at the front of the room; students can also control their own screen via a control panel at each table. The room has writeable whiteboard walls for annotating or diagramming. In this space, educators can experiment with specific technologies as well as flipped-classroom pedagogical techniques. At a PLC world-languages-themed open house this past year, for example, the room showcased

Korean music videos from YouTube on one screen, an annotated world map on another, and the Disney movie *Mulan* in Chinese on yet another. Language educators have frequently booked the classroom as their regular class meeting spot.

3. Standards for Video Instruction (Literature Review)

3.1 Flipped-Classroom Pedagogy

Stepping back from the Penn context, we note that many scholars have studied the usefulness of video in language learning, especially in the context of free, online sources that are easily accessible for language educators and learners. For example, Brünner (2013) lauds the effectiveness of active student engagement with YouTube videos. She provides a laundry list of YouTube channels for language learning, in addition to a “roadmap” for language learning with videos from YouTube. Brünner’s argument that the “mere presentation of the resources alone is not enough” (p. 1) and that engagement with videos via tasks and assignments makes for successful application of videos reflects discussions in academe about the benefits of flipped classroom and active learning techniques. In a flipped-classroom setting, students have the opportunity to struggle through the application of course material with guidance from instructors and peers. In preparation for this in-class work, instructors ask students to master content before coming to class (University of Pennsylvania Center for Teaching and Learning, 2014; Djiwandono, 2013).

In language classes, adding live video interaction during class energizes the classroom atmosphere and increases student engagement with content (Jauregi et al., 2012; Vedantham & Hassen, 2011). Language educators can enable more collaborative and active in-class time by shifting standard lessons, such as grammar or vocabulary, to a video (via courseware or YouTube) that students view outside of class (Djiwandono, 2013). Using a learning management system, such as Moodle or Instructure’s Canvas, instructors can create a hybrid learning environment with increased chances for student engagement and overall positive reactions from students (Shahrokni & Talaeizadeh, 2013; Dede, 2013).

3.2 Blended and collaborative learning

Flipped-classroom pedagogy as described above often leads instructors to pursue blended learning techniques, combining online and traditional (face-to-face) instruction, to provide a balanced experience for learners (de Leng, Dolmans, Donkers, Muijtjens, & van der Vleuten, 2010; Shih, 2010). As Alammary, Sheard, and Carbone (2014) discuss, blended learning has taken on various definitions depending on design of the online and face-to-face components, which the authors categorize into low-impact blend, medium-impact blend, and high-impact blend. However defined, this mixture of learning environments allows for more collaborative work among students during class time (Tims, 2009), which can be especially fruitful for language learners. For example, Shih (2010) studied blended learning in an English as a Second Language (ESL) class, examining the use of video-blogs as an effective means of expressing oneself in the target language.

Students in this study improved from group and instructor comments on aspects such as enunciation, articulation, gesture and posture. The video blog provided an effective medium through which students could regularly view, edit, and revise their recordings (Shih, 2010).

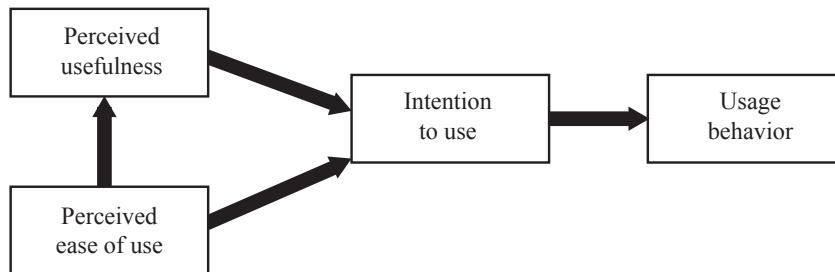
Courses and assignments that take advantage of blended learning benefit from collaborative approaches. Two common methods include problem-based learning, “an instructional methodology placing primary emphasis on students solving realistic problems in a team-oriented environment” (Neville & Britt, 2007, p. 226), and project-based learning, an approach that promotes hands-on activities, emphasizing contextual connections between the classroom and real life (Tims, 2009, p. x). Project-based learning involving collaborative activities has been shown to engage student interest and retain attention focus (Hidi & Renninger, 2006). Interestingly, Neville and Britt (2007) study problem-based learning for foreign language learning skills in biological engineering, allowing students to work collaboratively on producing a German-language paper on an engineering topic. The authors found that, along with regular in-person and online assessments, such collaborative methods led to increased mastery in both subject areas. In language learning specifically, Zorko (2009) studies collaborative behaviors in student wiki projects, positing online collaboration as a medium to enhance English language learning. As will be seen throughout this chapter, the choice of technology tool in collaborative learning can facilitate mastery of content in language learning.

3.3 Technology Acceptance Model (TAM)

Using video as an effective tool in language learning requires certain comfort levels with technology for both faculty and students. A tool that is flexible and with which students are comfortable allows for more focus on content (Karabulut, LeVelle, Li, & Suvorov, 2012; Wiebe & Kabata, 2010). A choice of familiar platform, such as YouTube or iTunes, can make video creation more casual, as opposed to a complex platform that requires instruction before video creation and editing afterward (Vedantham, 2011; Molyneaux, O'Donnell, Gibson, & Singer, 2008). Expectations are often high for video quality (i.e., students may not want to watch a low-quality video, nor instructors settle for including one in course materials). Frustrations can also run high for software that has a high “perceived ease of use” but, in reality, changes frequently and can be difficult to troubleshoot.

To understand this concept, Davis's (1989) Technology Acceptance Model (TAM) is useful in assessing how perceptions of technology use color actual behavior with technology, or what causes people to accept or reject technology (see Figure 1). Davis studied two variables—perceived usefulness and perceived ease of use—to gauge current and future use of technology. By perceived usefulness, Davis means “the degree to which a person believes that using a particular system would enhance his or her job performance;” perceived ease of use indicates “the degree to which a person believes that using a particular system would be free of effort” (p. 320). Davis found a greater correlation between usefulness and usage behavior than ease of use.

Figure 1
Technology Acceptance Model (TAM)



Note: Adapted from Davis (1989); Venkatesh, Morris, Davis, and Davis (2003); Miller, Rainer, and Corley (2003).

Studies following Davis's (1989) have built on TAM theory, incorporating what Venkatesh et al. (2003) called "user acceptance models" (p. 426). One of the eight models the authors discuss is self-efficacy, derived from Albert Bandura's work (1986) and defined by Venkatesh et al. (p. 432) as "Judgment of one's ability to use a technology (e.g., computer) to accomplish a particular job or task." This computer self-efficacy model becomes particularly interesting when linked to motivational studies in both online learning and second language (L2) learning. Miller et al. (2003) study TAM as it relates to and predicts participation and engagement in the online learning environment, finding that perceived ease of use and perceived usefulness (of a computer) will have a positive impact on the amount of time spent on an online course and, thus, engagement with the online environment. L2 motivation theories, stemming from both second language acquisition and psychology fields (Dörnyei, 2009), evaluate second language learning motivation through a "self" framework, involving a language learner's social, historical, and cultural relationship with and investment in the target language (Norton, 2000). From these discussions, we can explore how video technology—oftentimes with the self on screen and front and center—has the possibility to motivate language learners to gain self-knowledge in addition to other-knowledge of the target culture through the video creation process.

With TAM as an overall conceptual model, student and faculty perceptions of usefulness of video in language learning will be explored, taking into consideration group and individual motivation. As "net gens" or "digital natives," today's college students are often assumed to have a high reliance on technology and penchant for group collaboration (Beatty & White, 2005; Lippincott, 2012; Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009). However, as we have observed teaching students technology in the context of coursework, students can struggle with unfamiliar software platforms and spend more time learning a technology than focusing on course content. Moreover, if technology is only used for the sake of technology without careful pedagogical planning by instructors, even the most technologically savvy students can exhibit general anxiety toward a proj-

ect where technology factors as a key element (Karabulut et al., 2012; Wiebe & Kabata, 2010). New media literacies, including skills such as play, simulation, and collective intelligence, for example, (Jenkins et al., 2009), become necessary to support students in physical and online learning environments (Vedantham & Hassen, 2011).

With the advent of online language learning, educators have had to adjust their teaching approaches to engage learners' multiple attentions (*polyfocality*) by incorporating new strategies and new media into lessons (Meskill & Anthony, 2013; Jenkins et al., 2009). Instructors' and students' perceptions of technology—in terms of usefulness and ease of use—can vary widely (Karabulut et al., 2012; Wiebe & Kabata, 2010). In addition, perceptions of and actual use of technology in the classroom allow educators to align video assignments with learning outcomes and cognitive goals, such as innovation and critical thinking (Dede, 2013; Park & Kinginger, 2010).

As this chapter will explore, both faculty and students tend to have high expectations for video quality but often different perspectives on usefulness and perceived ease of use for the creation of video. Davis's (1989) TAM focuses on group rather than individual usage; while our study divides faculty and students into groups, we are also interested in the individual perspectives shared within each group. Although Davis and subsequent scholars have built TAM from other theoretical models, including self-efficacy (Venkatesh, et al., 2003; Miller, et al., 2003), few studies have explored self-knowledge in the process of using video technology for language learning. Intellectually, self-knowledge via technology can involve improved cognitive skills, material retention, and academic innovation (Dede, 2013; Park & Kinginger, 2010; Hidi & Renninger, 2006). In language learning, particularly through video in which students can be very visibly “on screen,” there tends to be a split in the research on video technology to learn more about the “other” (i.e., the other language and the other culture) (Truong & Tran, 2013; Hull, Stornaiuolo, & Sahni 2010) and about the “self” in the process of video creation and on-screen presentation (Ushioda, 2011).

With the ubiquitous nature of online video and social media, today's students are familiar with self-sharing—images, videos, information—via a participatory culture, one in which creating and sharing with others is paramount (Jenkins et al., 2009). Why should students' academic work be any different from this culture of sharing? Moreover, can increased awareness of both the “other” and the “self,” via both collaborative and individual work, be achieved through using video in language learning? We aim to explore these questions through the changing video tools that have led to new perspectives on course assignments, in conjunction with the type of technology used, perceived usefulness, and perceived ease of use for both faculty and students.

We describe next institution-specific details in providing language educators and learners with technology resources for video creation. We present a taxonomy of video tools in the context of past experiences with language courses as well as a discussion of new observations and results.

4. Methodology

To explore how language faculty and students in language classes use video technology, we set out various qualitative methods for collecting data.

1. Assistance with and observation of class activities:

We reflected on professional experiences assisting faculty to provide instruction on particular technology tools that are incorporated into assignments. Table 1 lists language classes we collaborated with and the tools they incorporated. In addition to these classes, course projects have been supported in several dozen courses in other disciplines (for a complete list of course usage of the Weigle Information Commons, see <http://commons.library.upenn.edu/course-usage>). Course assistance offered little formal data collection; rather, observations and experiences were captured by several WIC staff members over the course of many years. Several years of course assistance has allowed WIC staff to reflect on instruction and adapt techniques over time. In teaching students a technology tool, we realize that we are not unbiased observers; more positive than negative evaluations are typically received. Rather, we seek constructive criticism and aim to collaborate with faculty on curriculum design (for a French instructor's reflections on WIC's role in helping her design course video projects over several years see <http://youtu.be/uh3lxrnQNIQ>).

Table 1
Course Usage of the Weigle Information Commons

Courses	Year	Technology tools
French (134, 140, 202, 227, 402)	Several Semesters	Webcam video in Canvas, Skype, collaborative video projection systems, iPad videos, PowerPoint, iMovie
Italian 202	Spring 2009	Installed video cameras, DVD capture
American Sign Language	Several semesters	Installed video cameras, laptop webcams, PowerPoint, handheld cameras, iMovie
Spanish 240	Several semesters	Handheld cameras, YouTube embedded in Canvas
German 101	Several semesters	Webcam video, Adobe Connect, Canvas video integration
Japanese 011	Fall 2014	Voice-over PowerPoint

We focus observations on particular language courses in which video projects and assignments were paramount. In addition to observing these courses, we also assisted with technology support and instruction for the tools listed in Table 2. This direct experience allowed us to interview faculty members both during and after projects took place and also to ask students questions informally about the impact of video technology on their learning. Student questions were asked online through Google Forms and in-person conversation; responses are not quoted directly.

Table 2
Courses Observed for Video Projects

Course	Year	Technology tool
French 202	Fall 2013, Spring 2014	Google Hangouts, Skype
French 227	Spring 2014	Skype
Japanese 011	Fall 2014	Voice-over PowerPoint

2. PLC Showcase:

Each May, PLC showcases exemplary projects by language educators incorporating technology into their work, in conjunction with SAS Language Teaching Innovation Grants (Penn Language Center, 2014c). At the Eighth Annual Showcase and Teaching Award Program in May 2014, eight grant projects were showcased and two winners were chosen from a panel of faculty judges. We identified video projects of interest at this showcase and approached faculty members for interviews. After this initial contact, we used snowball sampling techniques to expand our pool of potential interview subjects (Atkinson & Flint, 2004).

3. Faculty Interviews:

In-person interviews were conducted with six language faculty members from the French, Italian, German, Korean, and Japanese language departments after viewing their course projects selected by other language faculty members for an annual PLC Showcase event in May 2014. Previous relationships with each faculty member varied: three instructors had come to us in years past for course support; two had attended WIC's technology workshops through the PLC's Certificate program (Penn Language Center, 2014b); one instructor was new to us, after viewing her project at the PLC Showcase. Faculty interviews were informal, involving one or both authors depending on availability. Questions were asked about the following topics: video tools used in courses, the selection process for tools, what learning outcomes were originally expected versus outcomes that occurred, successes and frustrations about particular tools, and general advice for other faculty looking to incorporate video tools.

4. Student survey:

To gauge students' perceptions of video's effectiveness in classroom learning, we conducted an online survey using Qualtrics survey software aimed at both undergraduate and graduate students in all twelve schools at Penn. The survey was done in conjunction with our annual Engaging Students Through Technology Symposium in October 2014 and addressed issues around that year's research question: "How can technology empower our students, and us, as learners?" Multiple choice and free response questions included:

- How has technology helped you to learn? How have your professors facilitated the process?
- What tech tools have proved powerful for your learning?

- Any examples where your professor used video effectively during class?
- Any examples where your professor used Canvas effectively?
- Any examples when you used video (including YouTube and online platforms) effectively to learn?
- Have you created videos? What tools have you used, and what have you learned from the process of creation?

4.1 Tools/Difficulty Matrix

To gauge faculty and student perceptions of video in language learning, we have applied Davis's (1989) TAM to assess perceived and actual use of specific video tools. We use TAM as a general guideline, taking into consideration that the model is not fixed; rather, it has been reinterpreted as others have applied it to advancing technology and varied scenarios (Venkatesh et al., 2003; Miller et al., 2003). Unlike a theory such as self-efficacy, which has been tested and evaluated in various disciplines (Vedantham, 2011), TAM is often criticized for its theoretical shortcomings (Chuttur, 2009).

Instructors take many approaches to orient themselves to a particular video tool. Some people make use of tools easily at their disposal, such as an iPhone to record a video and QuickTime Player (freely available software on a Mac computer) for video editing. Others seek outside help. For example, faculty draw upon the expertise of their school's IT department to consult on best video tools and practices; they use online library tutorials or in-person workshops to learn the mechanics of software. They can also borrow hardware (e.g., video cameras, tripods, and audio recorders) from campus equipment lending programs. All of these examples demonstrate not only individuals' comfort level and acceptance of technology, but also their perceived ease of use and usefulness of particular hardware and software. Many of these observations and criteria of tool assessment come from our own knowledge of faculty/student video needs and assistance with courses over the past several years.

Table 3
Hardware Taxonomy

Hardware	Perceived ease of use by faculty	Perceived ease of use by students	Perceived usefulness by faculty	Perceived usefulness by students
Handheld video camera	Hard	Moderate	Medium	Low
Flip camera	Easy	Easy	High	High
Room-based installed camera	Moderate	Moderate	High	Medium
Smart phone	Easy	Easy	High	High
Tablet	Moderate	Easy	Medium	High
Lighting equipment	Hard	Hard	Low	Low

Green screen	Hard	Hard	Low	Low
<i>Note:</i> In Tables 3 and 4, our ratings on ease of use and usefulness come from our own expertise and experience working with faculty and students on video projects over the past several years.				

Table 4
Software Taxonomy

Software	Perceived ease of use by faculty	Perceived ease of use by students	Perceived usefulness by faculty	Perceived usefulness by students
Microsoft PowerPoint	Easy	Easy	High	Medium
YouTube Online Editing	Moderate	Easy	High	High
QuickTime Player	Easy	Easy	Medium	Medium
iMovie	Moderate	Easy	High	High
Snapz Pro X	Moderate	Moderate	High	Medium
Adobe Premiere	Hard	Hard	Low	Low
Final Cut Pro X	Hard	Hard	Medium	Low

To assist faculty in evaluating the tools, we created a Screen Videos Guide (<http://guides.library.upenn.edu/screenvideos>), which lists hardware and software according to “basic” (rated high for ease of use) and “advanced” (rated low for ease of use). The tools are further divided by price range into three categories: free to below \$50, \$50-150, and over \$150. The guide includes resources for faculty with links from Penn and outside institutions as well as specific software guides, including Voice-over PowerPoint, Snapz Pro X, and Screen Flow. Our conversations with individual faculty, described next, provide iterative insights to inform our instructional practices with these video tools.

5. Results

5.1 Faculty Perspectives: Interview Vignettes

In the following vignettes, we summarize conversations with language instructors from the French, Italian, German, Korean, and Japanese language departments.¹ In each interview, we asked language faculty to describe how they have used video successfully as a pedagogical tool in the classroom and advice they would give other faculty looking to incorporate technology tools into language instruction.

- Reflective teaching (departmental):

PLC videotapes new teaching assistants teaching a lesson as part of their orientation to instruction at the university. Instructors prepare a 10-minute sample lesson (on a simple topic such as numbers or colors in the target language), present it to faculty members while being videotaped, and then review it with faculty members who stress positive aspects. PLC also re-

peats this activity later in the semester, videotaping a whole lesson and advising instructors on what to change and improve upon. Using video to capture teaching allows for reflection on the teaching process, concrete examples of strengths and weaknesses, and self-awareness in the target language (Ushioda, 2011). The video content is strictly private and confidential for use only with the group of faculty teaching a particular language. Video recording is handled by a professional staff person.

- Reflective teaching (individual):

A German professor uses a small handheld camera and tripod to record her own teaching. She reviews the video to look for teachable moments that she can share with her graduate students as demonstrations of key pedagogical moments (e.g., how to manage discussion, how to facilitate a grammar lesson, etc.). She described, “Seeing a teaching technique in action can work wonders.”

- Video syllabus:

The coordinator for an intermediate French course makes a video syllabus, or movie trailer, that students watch via Canvas before the first day of class to introduce them to her course. This faculty member prepared for, made, and edited this video over the course of two days. She wrote out a script of her own (1-1.5 hours) and studied the text (1 hour); her colleague filmed her using an iPhone (10 minutes); she edited the video using iMovie and QuickTime (about 5 hours), including searching for the best footage and music to include. The instructor took a workshop at the Weigle Information Commons on Final Cut Pro X, which would have worked well for her editing purposes; however, she decided to use iMovie since it was already on her personal computer. One goal of this pilot project was to show other language course coordinators that making your own video is possible and that it is a great way to present your curriculum as well as yourself in a more dynamic and engaging way than a traditional paper syllabus. This instructor was aware of her own perceived usefulness and ease of use, as well as that of her students, as she has seen through previous video projects and reflected on the importance of technology’s role in aligning with learning objectives (Karabulut et al., 2012; Dede, 2013). She would give the following advice to faculty using video technology in language classes: “Don’t lose sight of your pedagogical objectives (technology is not just for the wow factor). Change it up with dynamics.”

- Video for cultural understanding:

A Korean language instructor regularly uses YouTube video, specifically K-Pop—“a musical genre originating in South Korea that is characterized by a wide variety of audiovisual elements” (YouTube, 2014). The videos help students understand gestures like bowing and social acts such as greeting, apologizing, and complaining. Because these topics are difficult to learn via traditional textbooks and from passively watching a YouTube video (Brünner, 2013), this instructor hired actors to portray various cultural

scenes in Korean life, with the students in her class directing the actors on aspects such as intonation, gestures, and facial expressions. Hired students also completed all video editing and addition of Korean subtitles. Students then studied and incorporated aspects from these videos into live skits they performed in front of the class. The goal of using video in this class was to provide cultural context to the Korean language that students were learning. This instructor advises, “Faculty looking to take on a similar project should get help from available campus resources.”

- Flipped-classroom grammar:

The coordinator of elementary Italian experimented with flipping her classroom using voice-over PowerPoint and Canvas to post videos for students to watch before class. This instructor became frustrated with various Italian textbooks’ inadequate explanations of colloquial usage of grammar concepts, including verbs used idiomatically in different contexts, usage of verb tenses, prepositions, and themes, such as daily routine, travel, and visiting, time (telling time, having free time, having a good time, the number of times one does something are all expressed differently in Italian and do not, except in one case, use the dictionary translation for the word “time”). Of particular importance for describing one’s daily routine, she felt, was what she called “comings and goings.” Taking on this theme, the instructor used voice-over PowerPoint, which she learned through a library workshop, to create videos in which she modeled examples of different colloquial usage; for example, describing how to explain when one leaves the house in the morning, walks to class, goes to the gym or the library, comes home, goes out to supper or to a movie, and so on. The voice-over PowerPoint video files are saved to Canvas for students to access from home and watch as many times as they feel necessary. In describing the sequence and rationale for this project, the instructor explained:

When [students] feel confident about the material studied, they then access a video recorded by the instructor using the live video feature of the Discussion Board in Canvas to record herself talking into the camera for a couple of minutes discussing her daily routine, for example, or a trip she has taken, or another topic of importance in which knowledge of idiomatic usage is paramount. Students watch this model video, and then reply by making their own video for others in the class to watch.

By the time they come to class, students are thus prepared to use these colloquial terms in conversation with each other, asking and commenting on how other students spend their time, for example, and how their activities differ from those of the instructor. The recorded work of the students can also be used for the instructor to go over individually with a student having difficulties, thus serving a further goal. The primary goals of these flipped-classroom exercises include teaching students colloquial grammar usage, making students feel more comfortable with spontaneous conversation in the target language, and having students view their own speaking and com-

prehension progress over the course of the semester. In this way, video enabled for more meaningful class time and enhanced language learning (Zorko, 2009; Hidi & Renninger, 2006).

- Primary sources with Skype:

A French instructor uses Skype to connect her students with primary sources so that her students can listen to and converse with native speakers. For one class, students were studying the German occupation of Paris during World War II. The instructor's 93-year-old grandmother, who lived through the occupation and who currently lives in Paris, was willing to Skype with the students and share her experiences. The grandmother provided interesting perspectives on historical and cultural issues of that time, which, the instructor said, "students might not have gained from reading a book or watching a film about the time period," indicating the significance of interaction with native speakers and cultural context for language learning motivation (Jauregi et al., 2011; Truong & Tran, 2013; Hull et al., 2010). This same instructor, for a different French course also studying the German occupation of Paris during World War II, used Skype for students to speak with the author of the novel they read for the course. The session was conducted in the Collaborative Classroom, where the Skype session was projected on all walls of the room. Students approached the camera individually to ask the author questions. The goals for these sessions included connecting students with primary source materials, conversing with a native French speaker and, in the case of the author, teaching students how to develop a written story by talking about one's work.

- Character selfies:

The same French instructor mentioned in the example above has developed an assignment in which students take on a character in German-occupied Paris during World War II. They write a book chapter about this character in Canvas, including a video interview with the character. This assignment has run from 2007 with students recording themselves to DVD using equipment in the Weigle Information Commons' video recording rooms with no video editing to the present assignment using webcams and editing software (iMovie) to upload videos to Canvas. The instructor has commented that through the years, "Technology adds a level of metacognition and awareness ... helps [students] decode languages, know the self and the world better via language and culture." According to the instructor, in the earlier years of the assignment students were able to separate themselves from the character they impersonated. Now, students and characters intertwine, and characters have become selves. Through exploring the other, video enables students to come closer to themselves (Ushioda, 2011; Dörnyei, 2009; Norton, 2000). As the instructor noted, "At first, students were very much outside of themselves; now, it's a series of selfies." This instructor stressed that technology creates new needs and goals in the classroom; both instructors and students have to adapt to this. As advice, she

stated that instructors must know what their goals are and find what methods work best for them. As other researchers have suggested (Karabulut et al., 2012; Wiebe & Kabata, 2010), this instructor also advised to make sure students are comfortable with the technology tools and to not assume that students know how to use these tools effectively.

- Videos for self-introduction:

A Japanese language course coordinator worked with students for the first time in fall 2014 creating videos for self-introduction using voice-over PowerPoint. Although the files students created are video files that were uploaded to Canvas, students did not need to film themselves; rather, the goal was to talk about themselves and their interests using voice-over narration in less than five minutes. This was the students' final project for the class. Library staff members trained the instructors on voice-over narration to ensure that they were comfortable answering any questions students had throughout the project and later trained all the students as well. The videos were posted to the class Canvas course, instead of a public platform like YouTube, where video quality is better, to ensure that student privacy was respected. The goal of this assignment was for students to use vocabulary effectively and to become comfortable describing themselves and their interests in the target language. In the course coordinator's words, "This video project also allows students to compose their messages in a creative way through 'multimodal' communication that includes the textual, aural, and visual resources." In addition, putting a voice to a video, even with students remaining off-screen, allows for self-reflection in the context of another language (Ushioda, 2011; Dörnyei, 2009; Norton, 2000).

5.2 Skills List

In addition to providing advice for other faculty members seeking to use video tools in language learning, many instructors provided concrete skills to develop when working video into language courses.

- Scriptwriting and storyboarding:

Faculty members stressed the importance of creating a script before recording a video. Once comfortable with the material, making the video can be the focus of the next step. Some found it helpful to draw out (on paper or digitally) a storyboard, which can be an effective exercise with students as part of recording preparation.

- YouTube searching:

Faculty members appreciated the ability to find and adapt clips from YouTube in lieu of creating clips from scratch (Brünner, 2013). Searching YouTube for clips that demonstrate grammar concepts, pronunciation, cultural gestures, facial expressions, and context can go a long way. One faculty member uses TED Talk videos with transcription as a way to help students practice public speaking in their target language.

- Video annotation and clip extraction:

When thinking of tools to use for video creation, consider how easily subtitles or annotations can be added to video. If higher quality is the goal, choosing a more complex tool and leaving editing to the experts might be an option. However, if editing the video yourself, make sure to choose a comfortable platform.

- **Editing:**

Video editing software runs from very basic (e.g., QuickTime Player, built in to Macs) to very advanced (e.g., Final Cut Pro X, a licensed product). Determining how much time you are willing to put into video editing and how much of a factor the technology piece will be in assignment completion (Karabulut et al., 2012), can also determine the scope of your and your students' projects. Calling upon professionals to edit video may save both you and your students' time, if learning editing software does not factor into the learning outcome for the assignment. Students and faculty emphasized the need to avoid perfectionist tendencies in over-editing clips.

- **Recording:**

Options for recording video continue to grow. Hardware, such as a traditional video camera and tripod or a flip camera, can sometimes be perceived as more difficult to use than a webcam built into a computer. Smart phones and tablets offer built-in video recording options. Software for recording also runs from basic to advanced, taking into consideration audio quality. Some courseware platforms (e.g., Instructure's Canvas) offer built-in recording capability, which can provide an alternative to learning a particular hardware or software for recording. Picking a recording option that both instructors and students are comfortable with will make the video creation process run more smoothly for everyone involved (Karabulut et al., 2012; Wiebe & Kabata, 2010).

- **Understanding the language level of a video:**

While some videos, such as those found on YouTube, may provide cultural context for students, instructors emphasize the need to ensure that the language level is appropriate for student understanding. Also, videos with subtitles in the native language can provide students with both cultural context and language comprehension (Truong & Tran, 2013).

- **PowerPoint skills:**

Basic PowerPoint skills can improve video creation, especially with features such as voice-over narration and adding YouTube and other videos into PowerPoint presentations. Although PowerPoint is not typically categorized as video-creation software, the ability to save a PowerPoint presentation directly to a video file (either .wmv or .mp4) can transform how language educators create lecture videos to flip the classroom.

- **Student comfort with software:**

Depending on the video project one is planning, some software can be too complex for students to learn in a short time and for a particular project

(Karabulut et al., 2012). It is essential to assess the skills needed for a video project and seek software that enables students to do this comfortably.

- Courseware connection:

Courseware, such as Moodle or Instructure's Canvas, provides a platform on which to share and archive student videos. Taking advantage of built-in recording capabilities can be an easy and effective way for students to make successful videos. Using video capability in courseware, whether for recording or storage, also allows for connections with course materials and assignments in one platform. Courseware also helps protect student privacy in important ways (Levy & Stockwell, 2006).

5.3 Student Perspectives: Campus-wide Survey

In conjunction with our annual Engaging Students Through Technology Symposium in October 2014, we conducted a campus-wide student survey open to both undergraduate and graduate students, addressing questions around this year's theme: "How can technology empower our students, and us, as learners?" The Symposium receives campus-wide attention from all twelve schools at Penn. Each fall, we embark on a major outreach campaign to encourage faculty and graduate students to attend the event. As a part of this outreach, the student survey responses help guide the development of Symposium workshop topics, which include sessions for language educators. In survey results ($N=57$), several students reflected on video integration in language classes.

Students mentioned making videos of themselves talking in their target language. One student expressed difficulty using video, saying, "I used iMovie to create movies for the cultural journal in Spanish. I learned rudimentary editing skills and found it very frustrating." This indicates a mismatch, as Karabulut et al. (2012) discuss, between student and teacher rationales for using technology in an assignment. Another described learning from the process of making videos, stating, "Yes—recorded a video for French to be evaluated on speaking/content. I can look back on it now and fix my mistakes/listen to how I sound so I know what to work on."

Students also commented on how their professors used video. One student described, "My Spanish professor will often play Spanish music and in the background during discussion which helps us feel a little more involved in Spanish culture. We also watch many informational videos which have the same effect." Another gave a specific example of language videos, saying they appreciated "language professors who show news clips. It gives us not only knowledge of current events in the world but also exposure to a different manner of speaking than we are used to listening to." These student comments endorse the view that incorporating technology—whether audio or video—into foreign language coursework not only improves student understanding of linguistic elements, but also enables them to feel more culturally immersed in the target language (Truong & Tran, 2013).

6. Conclusion

Through the process of writing this chapter, we have begun to understand the complexities of integrating video tools in language learning classes. As we talked with faculty and students, we noticed that the same tool (e.g., iPhone) could be used in many different types of activities depending on the teaching philosophy of the faculty member and the situations of that particular class. Similarly, faculty and students would take on the same task (e.g., create a video of just your face speaking in a different language) and approach it with many different tools depending on their prior knowledge, perceptions of ease of use, and perceptions of difficulty.

The vignettes above provide examples of how some faculty members integrate a particular tool into their teaching practices and may provide ideas for replication and adaptation. The process of introducing a technology tool to a faculty member can have a significant impact on eventual implementation, and library staff can play crucial roles in this process. We have found that developing extensive customized local tutorials with links to materials on the open web have helped faculty approach tools with more optimism and confidence. The ability to reflect on and adapt workflows at the end of each semester (and sometimes in mid-stream) has been helpful. Each of the tools we have described has kinks, bugs, and drawbacks. If library and instructional support staff can explore these hazards hands-on ahead of time and provide guidance in locally adapted tutorials, it assists faculty in handling student questions.

As our course usage suggests (see Tables 1 and 2 above), faculty interest in video tools has grown steadily over the last decade. A limitation of this particular study involved following multiple courses over a large time span, rather than focusing on one course with pre- and postfaculty and student comments about video use for language learning. Another limitation involves interviewing language educators whose projects we had been introduced to at an awards ceremony, where they had already been chosen by language faculty members as exemplary. We had worked with many of these faculty members in previous years and were familiar with the technology progression of their courses. Future research efforts could include representative interviews of the full faculty of several language departments including educators who have not used video tools and those who have decided to stop using video tools.

In future work, we aim to document the life cycle of one semester-long language course and its use of video. Components could include instructor interest and technology training, assignment parameters and development, a presurvey for particular tool use, student instruction, a postsurvey for technology tool use, evaluation, and analysis of student performance. Given the increasing interest in video use for language learning, we expect that video will be woven into language instruction as a matter of common practice in years ahead.

Our role in providing course assistance from the student perspective has become more transparent over time and has allowed us to adapt our teaching. For example, many technology trainings take place during class time with attendance required by the instructor. This group setting is not always conducive to the best

learning for every student: some come into class knowing how to use the technology, while others are hesitant to ask for help in front of their peers. This is reflected in the number of students who come to us for one-on-one help after the course training session. As library staff, our role is a neutral one: we give no grades and we work with students on their individual projects. In this one-on-one interaction, students gain confidence and self-improvement, which does not necessarily happen in the classroom setting.

Student perspectives, especially in conjunction with faculty interviews and the studied literature, revealed many new insights. While the student survey comments suggested that video enabled an immersion in the target language and culture, faculty noted that the self-awareness process has grown over the years as technology and social sharing norms have changed. Webcams allow opportunities for selfies when speaking on camera in a different language; voice-over PowerPoint can be used to project one's own voice and images as a video shareable on YouTube; Skype allows for direct access to primary resources, putting students in touch with the "other" in real-time. These findings begin to address a gap between other- and self-oriented goals in language learning: video assignments offer the opportunity for both exploring other languages and cultures and for discovering the self through another language. Using video tools that are comfortable and accessible to students facilitates both faculty learning objectives and student command of language content.

Note

¹ To view more faculty perspectives on student video creation in various disciplines, see the ELIXR MERLOT Faculty Development Initiative: Nurturing Student Creativity with Video Projects (<http://elixr.merlot.org/case-stories/teaching-strategies/nurturing-student-creativity-with-video-projects>).

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Chapter 8

Researching Machinima in Project-Based Language Learning: Learner-Generated Content in the CAMELOT Project

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Summary

This chapter describes a 2-year (2013-2015) European Union funded project exploring the use of machinima in language education and the research approach used to investigate learner interaction in the immersive learning environments in which machinima are produced. Machinima are digital videos created by learners and instructors using screen-recording software within 3D immersive worlds or digital games. The CAMELOT project (Creating Machinima Enhances Language Learning and Teaching) includes nine partners from Belgium, the Czech Republic, Germany, Holland, Poland, Turkey, and the UK and has been supported by the Lifelong Learning Programme (LLP) under Key Activity 3 ICT (KA3). In addition, over 30 associate and network partners provide expertise across a range of pedagogical and technical fields, building successfully on previous EU projects that have investigated the potential of virtual worlds (e.g., LANCELOT, AVALON, NIFLAR, EUROVERSITY). CAMELOT focuses on a range of key themes in contemporary computer-assisted language learning (CALL), including a commitment to open educational resources and Creative Commons licensing, and an investigation of the role of learner creativity using digital video in the context of project-based learning (PBL).

1. Introduction

Developing effective learning environments that integrate opportunities for teachers and learners to develop digital literacy, intercultural, and lifelong learning skills is an important goal of contemporary computer-assisted language learning (CALL; Thomas, Reinders, & Warschauer, 2013). The EU-funded CAMELOT Project (Creating Machinima Enhances Language Learning and Teaching) attempts to harness the power of machinima or user-generated digital videos created in immersive environments in order to integrate these skills. As video-sharing channels such as YouTube and machinima.com indicate, machinima involve users in sharing advice, digital storytelling, and creating online communities of practice based on collective knowledge (Ohler, 2007). As indicated by the huge volume of

hits on such sites, which are typically in the hundreds of thousands, machinima channels command great loyalty from a core group of creative participants and viewers. As has so often been the case throughout the history of CALL, however, practitioners and researchers who seek to adapt technologies that were created for another purpose must deal with a range of pedagogical and technical challenges when attempting to reposition them in an educational context.

CAMELOT starts from the position that language education needs to recognize innovative practices in digital technologies if it is to engage and motivate today's teachers and learners. In the contemporary context, language education needs to move from the periphery to the center of the curriculum and to provide learners with a range of new digital skillsets to broaden its appeal in an age of 'learning for employability.' Machinima making can be considered part of the new focus on learner creativity involving digital media within the context of Web 2.0 applications, enabling learners and instructors to engage in user-generated content creation (Schneider & Rainbow, 2014). Set against a background of language learner interaction in these increasingly immersive learning environments, new research approaches are required in order understand learner creativity and engagement in these complex contexts. In CAMELOT, research is conducted on learners and instructors as they plan, create, and use machinima, as well as in a dedicated online teacher training course that has been developed as part of a 5-week machinima open online course or MOOT involving both synchronous and asynchronous communication. This chapter describes the aims and objectives of the CAMELOT project as well as the teaching and research context from which it emerges.

2. Background to the Project

The objectives of CAMELOT include four main areas: (a) promoting language learning in authentic virtual environments utilising a project-based approach based on tasks in which the emphasis is primarily on learners' communicative competence, (b) helping teachers and learners develop the skills to produce real-time video productions, (c) creating example machinima and field testing them across four educational sectors (e.g., schools, higher education, adult education and vocational education), and (d) creating an innovative online teacher training course or MOOT (Machinima Online Training Course), based on the principles of MOOCs (Massive Open Online Courses), that is also available as a free mobile application.

The CAMELOT consortium has expertise in research on language learning technologies and task-based language teaching, teacher training, digital video production, accreditation of teacher training courses, quality assurance, and technology-enhanced learning, and the project relies on a variety of pedagogical approaches rooted in open educational resources. It attempts to empower teachers to create their own language learning materials; enable learners to study at their own pace; provide online learning environments to make language learning enjoyable and engaging; promote collaborative learning; and deliver low cost solutions for digital video production that are accessible by learners and instructors, enabling them to create content quickly and efficiently (Shrosbree, 2008).

Digital technologies have been advanced as a powerful way of overcoming some of the challenges presented by traditional language teaching approaches, and CAMELOT focuses in particular on investigating the use of immersive environments such as virtual worlds and digital games to overcome limitations affecting learners' abilities to practice the target language (Brewster, 2009). Through the use of machinima the project aims to enable learners to learn and practise a foreign language in an authentic digital environment, such as, for example, when learners are able to learn German by practicing dialogues and role plays in the virtual city of Munich in Germany.

CAMELOT begins by developing principles for how language educators can use immersive virtual environments for language teaching and learning and in particular for how machinima can be deployed in this context. There is a firm emphasis running throughout the project on user-generated video production, and therefore there is a need to understand the skills teachers and learners require in order to participate in the machinima-making process (Barrett, 2006). The project is based on a needs analysis of language teachers to determine the potential for using 3D immersive environments. Building on this, a framework for the use of 3D virtual environments has been developed by reviewing available literature in the field in order to clarify the contexts in which machinima is being used in education. Specific guidelines for language teachers have then been produced which provide recommendations about how machinima can be used by language teachers in the future.

Following this, the project collaborates with teachers from four EU educational sectors (e.g., Erasmus, Comenius, Grundtvig, Leonardo da Vinci) to develop a digital storytelling process that takes learners and instructors from idea creation through storyboarding to the production of a series of machinima that can then be used for reflection and language awareness. The machinima are then stored in a dedicated YouTube channel, and it is intended that a full list of machinima will eventually be made available for download, enabling learners and teachers to use, reuse, and share entire machinima or parts of machinima videos throughout the lifecycle of the project. This approach is intended to help language educators interested in machinima production to lower the technical and pedagogical barriers to entry in the field.

Having established this foundation, a mobile application will be developed to help language teachers learn and understand the process of machinima production. The machinima produced during the project will be field tested with teachers from the four sectors, and data collected from surveys will provide feedback from teachers and learners about their effectiveness. Arising from the machinima production process and field testing, CAMELOT's teacher training course aims to help teachers with the technical and pedagogical aspects of the process. The course will be made available in the second half of the project via a blended-learning approach, enabling teachers to study online via autonomous or facilitated pathways involving both synchronous and asynchronous study.

Dissemination activities are central to the project, and CAMELOT has created an online community of practice by establishing a network of interested and like-

minded language educators working in virtual worlds and language education. The network is supported by interviews, webinars, workshops, social media channels, conference presentation, and publications in order to promote machinima and language learning and to identify the pedagogical and technological challenges educators may face during development and implementation.

3. The Research Context

One of the main objectives of the project is to investigate the potential of visual modes of communication in the context of language learning (Brooke, 2003). According to research, machinima can be a powerful way of engaging young learners and investigating the potential role of digital video production in relation to deep learning is a key objective of the project. While much of the work in CALL has focused on higher education and English as a foreign language, CAMELOT is also committed to extending this by including less commonly taught languages such as Czech, Dutch, Polish, and Turkish, where considerably fewer research studies have been conducted on immersive environments for language learning to date. Recognising this gap in the research, at the heart of CAMELOT is the need to empower teachers and learners by lowering entry barriers and enabling them to access e-learning and multimedia environments in their own language. While traditional video production can be time consuming and expensive, CAMELOT aims to make the process low cost as films can be shot in virtual worlds using screen capture software such as Camtasia or FRAPS (Schneider & Rainbow, 2014). In promoting the digital literacy skills of teachers and learners, it also promotes a rethinking of the role of educators, developing flexible and blended approaches rather than adopting an overly prescriptive and didactic approach. Research on task- and project-based language teaching using new technologies has therefore been integral to developing an appropriate pedagogical framework for the project.

3.1 Technology-Mediated TBLT

Much of the research on immersive environments is based on developing collaborative and creative resources for language learning. In terms of language pedagogy, the CAMELOT project develops from a task-based language teaching approach (TBLT) that places the emphasis firmly on learners' ability to communicate in the target language using collaborative tasks they would find in the real world, such as giving directions, checking into a hotel, or purchasing something in a shop. Research on technology-mediated forms of TBLT have developed in recent years to overcome some of the challenges presented by doing authentic tasks in classroom environments. The value of using virtual worlds and immersive environments is that learners can experience scenarios that simulate the real world. For example, learners may watch a film with a role play between two actors in Paris. Instead of repeating the role-play in the clasroom, they can re-enact, develop, and extend the dialogue by visiting virtual Paris and recording their dialogue. Teachers and learners can then reflect on the digital videos or machinima that have been produced and identify grammatical structures that learners need

to focus on as a consequence (Schneider & Rainbow, 2014). All of the tasks that form part of the machinima process present learners with opportunities to engage with one another in the target language, either during the preparation phase while sitting at their computer screens, when they are immersed in the virtual world recording their machinima, or in post-machinima reflective activities.

Over the last 20 years, CALL has moved from an earlier “structural” or “behaviorist” phase, through “communicative” CALL to a third “integrative” stage (Warschauer, 1999) in which authentic tasks based on negotiation of meaning have been increasingly in the ascendency (Beatty, 2010). During the more recent phase of communicative CALL, “pedagogically controlled tasks” (Evans, 2009, p. 22) have been used in computer-mediated communication (CMC) to explore a series of research issues typically found in TBLT studies, such as complexity of student output (Sotillo, 2000), the Interaction Hypothesis (Toyoda & Harrison, 2002), implicit corrective feedback (Pellettieri, 2000), L2 pragmatic competence (Belz & Kinginger, 2002), and learner anxiety (Arnold, 2007), as well as cross-cultural communication (Müller-Hartmann, 2000). In considering how task-based approaches can be used in technology-mediated environments, Doughty and Long (2003) identified ten principles that have remained a key reference point for over a decade:

1. Tasks are the primary unit of analysis;
2. Develop a strategy of learning by doing;
3. Input needs to be explained and elaborated as relying on authentic texts will be insufficient;
4. Input should be rich;
5. Develop chunk-based learning;
6. Emphasize the importance of focus on form;
7. Provide negative feedback to learners;
8. Demonstrate awareness of learners’ developmental processes;
9. Advance collaborative and cooperative styles of learning;
10. As much as possible personalize the instructions for learners based on their needs and learning styles.

The 10 principles reinforce a particular view of technology-enhanced language learning based on authentic content as well as the importance of stimulating collaboration and interactive activities. These principles establish the importance of authentic tasks based on experiences that learners can readily identify with, supporting Gee’s (2004) notion of situated learning, which presupposes that the more real the task, the more likely learners will be willing to take it seriously. Through the rich use of video, audio, and animation, multimedia applications have the potential to bring learners’ computer screens closer to an authentic experience. Motivating learners is central to these principles, as is the emphasis on learning by undertaking the experience rather than merely reading about how to do it.

Technology-mediated TBLT has become more prominent since the publication of the first edited collection on the subject (Thomas & Reinders, 2010), two special editions of journals (Hamel, 2014; Thomas & Lai, 2013), as well as a new

volume of edited essays by González-Lloret and Ortega (2014). A comprehensive literature review on the subject has also been provided by Lai and Li (2011), which argues that many of the challenges facing the implementation of TBLT “are due to the temporal and physical constraints of the classroom context and could potentially be minimized with the assistance of technology” (p. 2). Moreover, according to Lai and Li, technology offers the potential for a greater range of tasks. It may also develop more authentic tasks, increase learner motivation, promote ownership of task activities, make learners more active in the task completion process, enable learners to develop knowledge of the target culture, and develop learners’ digital literacy skills. Although the strong focus on controlled task-based activities which include a linguistic aspect (Ellis, 2009; Samuda & Bygate, 2008) is an important one, Lamy (2006) argues for a broader understanding of tasks in technology-mediated environments, moving toward a “less structured, more inquiry-based task space” that “encourages learners to exercise agency and enact identities” (p. 263). It is the latter that is particularly relevant to the use of machinima in language education contexts.

Lai and Li (2011) discuss the reciprocal relationship between TBLT and technology, exploring how technology has contributed to TBLT and how TBLT has contributed to our understanding of technology-enhanced learning. In relation to the former, the focus has been mostly on synchronous and asynchronous CMC contexts involving learner interaction in online text chat, email, or, latterly, Web 2.0 applications such as blogs and wikis. Research suggests that technology-mediated tasks may support increased language production during task performance in online environments (Beauvois, 1995), as well as during a follow-up face-to-face discussion (Abrams, 2003). Lai and Li argue that while results are mixed, there is evidence to support the view that technology-mediated tasks can “enhance the quality of language production” (p. 6) (Yamada & Akahori, 2007) and aid learners’ language development (Ducate & Lomicka, 2008). Moreover, technology may equalize learner production during tasks by removing the focus on interruptions caused by error or pronunciation correction (Ortega, 1997) by providing opportunities for learners to interact during text chatting, particularly in the case of shy students who may not normally interact in face-to-face classrooms (Kelm, 1992). The availability of a variety of channels of communication is important in this respect (Kenning, 2010). This may also be related to a less dominant role for instructors, enabling learners to feel more at ease during communication (Fitze & McGarrell, 2008). Synchronous text chatting can also lead learners to monitor and notice grammatical features, and contribute to greater lexical diversity and complexity than in face-to-face contexts (Sauro & Smith, 2010). The less formal interaction evident in CMC tasks such as text chatting may lead to more learner-centered environments that blur the boundaries between learners’ in-class institutional identity and out-of-class nonacademic identity (Thorne, 2003). Indeed, Lam (2004) and Black (2008) indicate that failing learners may benefit in particular from these opportunities to participate and develop agency vis-à-vis their L2 identity. This is evident in learners’ wide range of discourse, small talk, greetings, playfulness, and casual chatting in CMC environments (Warner, 2004).

Carefully designed text and voice chat tasks may lead to a higher frequency of negotiation of meaning (Ortega, 2009).

Typically, the research mentioned above has been quantitative in focus. The move from experimental studies to investigating learner perceptions through more qualitative research is reflected in the attempt to reconceptualize tasks and to make them relevant to and capable of exploiting the potential of technology-mediated contexts. Chapelle (2001) initiated this work when she argued for understanding tasks as involving other skills such as digital literacy and intercultural skills as well as a primary focus on meaning and authenticity. Hampel (2006), Hauck and Youngs (2008) and Warschauer (2001) all point to the importance of a project-based approach using tasks in which a variety of forms of communication are embedded and learners' evaluative and interpretive skills are emphasized. As Lai and Li (2011) suggest, "implementing TBLT in the technology-mediated environments has spurred researchers to look beyond researching and discussing conventional constructs associated with TBLT (e.g., negotiated interaction) to investigate and expanded set of constructs (e.g., learner identity development, play, etc.)" (p. 508); it is these that have become more central in research on machinima in language learning contexts.

Throughout this process of adapting to project and task-based teaching and learning both instructors and learners are confronted with a new set of challenges. These approaches require learners to alter their perspective towards a more learner-centered approach (Hampel, 2006); learners have to have positive attitudes in order to take risks (Lai & Li, 2011), and they need an awareness of their own cultural histories and learning styles (Kramsch & Thorne, 2002). Raising awareness through pre-project training sessions may be one solution (Cornelius & Boos, 2003).

Furthermore, instructors also face a range of challenges. These include engaging with a multiplicity of roles, moving from the authoritarian transmitter of knowledge to the facilitator, mediator, and monitor of activities (Kern, Ware & Warschauer, 2004). This multifaceted role may add anxiety to instructors as they grapple with technological, pedagogical, and institutional change, all of which involve risks they may or may not be willing to take if the advantages of innovation are unclear. Implementing communicative approaches in many parts of the world has been challenging to date (Thomas & Reinders, 2015); the challenges associated with implementing technology-mediated project-based learning (PBL) are likely to be even more multidimensional and influenced by a variety of institutional, administrative, and pedagogical factors (Hampel, 2006).

3.2 PBL with Digital Video

While there have been a plethora of projects on digital video in recent years, the CAMELOT project is motivated by the attempt to understand the technological and pedagogical barriers that exist in this field, especially for teachers and teacher trainers. The project investigates the potential of utilizing digital video as a new language for communication and aims to understand how teachers and learners can use the medium in mobile learning as well as in face-to-face and blended con-

texts. The visual aspect of machinima is highly appealing and complements the language learning process, helping with the visualisation of new words, concepts, and idioms, for example.

As we have seen, task-based language teaching aims to provide the conditions for effective language learning by providing learners with an opportunity to complete real-world activities in the target language. Building on task-based approach, PBL has been used in a variety of disciplines across the educational spectrum (Fried-Booth, 1987) and more recently, research has started to appear that specifically addresses the field of language learning (Desiatova, 2008). According to Desiatova, a project can be defined as

an extended task which usually integrates language skills work through a number of activities. These activities involve working towards an agreed goal and may include planning, the gathering of information through reading, listening, interviewing, etc., discussion and processing of the information, problem solving, and oral or written reporting, and display. Project-based learning has been promoted within ELT for a number of reasons. Learners' use of language as they negotiate plans, analyze, and discuss information and ideas is determined by genuine communicative needs. (para 3)

Through a combination of extended tasks which engage learners in a range of skills, as Desiatova suggests, projects may develop learner creativity and their ability to plan and collaborate in the target language. The British Council (2013) describes PBL as a more ambitious than TBLT in that it places a greater emphasis on learner-centeredness. The emphasis on learner engagement is at a higher level than in TBLT due to the fact that in PBL, a task is the focus of a much more significant period of time such as a whole module, semester, or academic year (Howard, 2002). In defining PBL, the British Council identifies four core activities:

1. A central topic from which all the activities derive and which drives the project towards a final objective;
2. Access to means of investigation (the Internet has made this part of project work much easier) to collect, analyze and use information;
3. Plenty of opportunities for sharing ideas, collaborating and communicating. Interaction with other learners is fundamental to PBL;
4. A final product (often produced using new technologies available to us) in the form of posters, presentations, reports, videos, webpages, blogs, and so on.

Rather than merely transmitting knowledge, PBL is underpinned by an experiential and reflective process and develops from an open-ended approach that may not be overly restricted by predetermined plans or procedures (Stoller, 2002). In developing project-based approaches, pragmatists were reacting against educational philosophies based on memorization and rote learning (McConnell, 1996). In their place, experiential learning promoted active learning and the use of the immediate environment of learners to stimulate engagement (Kotti, 2008). Consequently, the use of PBL in language education has built upon this potential, with research arguing that it provides opportunities for self-realization, motivation, autonomy,

and positive L2 identity (Fried-Booth, 2002; Stoller, 2006). Engaging in project planning activities and negotiating critical aspects of the project can aid learners' collaborative skills (Coleman, 1992). Like task-based learning, project approaches stress the importance of using language in authentic or natural contexts, attributing a primary role to meaning rather than target linguistic structures (Levine, 2004). Authentic tasks engage learners in problem solving that require a diverse range of outcomes that are not predetermined by one solution and integrate skills across the curriculum (Stoller, 2006). This results in higher levels of motivation, critical skills, and activities that learners may see as enjoyable and fun to complete (Lee, 2002). Positive benefits of project-based language learning also include lower levels of learner anxiety because it engages learners in combining social and academic objectives to aid target language fluency but over a longer period of time that is usually the case in typical task-based approaches (Dörnyei, 2001). PBL aims to be a learner-centered approach in which instructors act as advisors, guides, and coordinators rather than experts (Levy, 1997; Papandreou, 1994).

Founded on an approach combining a project with extended tasks, CAMELOT develops machinima in tandem with teachers to create interactive cinematic productions. In machinima, avatars or digital characters can be manipulated by teachers and learners in authentic contexts, such as at a train station, in a hotel, or at a tourist attraction. Scenes are recorded and the finished productions can be highly sophisticated stories based on a planning and storyboarding process carried out by learners and/or learners and teachers in collaboration.

The approach adopted in CAMELOT, then, is not merely concerned with developing attractive digital video content that can be used by teachers and learners, but rather with developing a framework which enables them to develop the skills necessary to create their own machinima content and to adapt them to their own pedagogical context (Brewster, 2009). CAMELOT aims to provide example machinima and lesson plans to aid the language community and to indicate the potential of the medium. Developing the teacher training course so that it is available to teachers in a variety of formats—online as an autonomous course, a facilitated online course, and as a blended format involving online and face-to-face workshop format—aims to provide a range of benefits and opportunities for teachers to create a community of practice around machinima and digital video in language learning contexts. To summarise, the main approach of the CAMELOT project is guided by the attempt to promote machinima for language learning in order to provide:

- Fit for purpose education: teachers can create learning environments for their students;
- Learner autonomy: students learn and practice at their own pace;
- Learner empowerment: learners can try a new language and learn about the target culture without feeling self-conscious;
- Collaborative learning: teachers and students can jointly create digital resources;
- Low cost and accessible video productions: these stimulate learner engagement in the language learning process and develop a range of key digital skillsets.

By identifying and developing these objectives CAMELOT contributes to contemporary debates about the role of technology-mediated project and task-based language learning and combines digital technologies with an appropriate pedagogy for today's teachers and learners.

4. Research Approach

It is important when confronted with these complex digitally mediated environments to consider methodologies that are not overly dependent on textual transcripts and spoken discourse at the expense of nonverbal interaction such as gestures and expressions (Lai & Li, 2011; Seedhouse & Almutairi, 2009). In moving beyond a simplistic focus on linguistic gains based on experimental studies, Lai and Li argue that it is also important to measure "gains in the learners' ability to collaborate and communicate effectively online with peers and intercultural partners, the development of their intercultural competency and digital literacy skills, and the formation and development of their L2 identity" (p. 511). This may be done by understanding the need for split or delayed negotiation in asynchronous communication in place of negotiation of meaning in real time (Smith, 2003). It may also involve innovative holistic approaches using video recording of learners' computer screens to identify patterns and connections between a variety of different multimodal data sources (Seedhouse & Almutairi).

Given the dominance of qualitative research in the CAMELOT project, a number of Computer Assisted/Aided Qualitative Data Analysis (CAQDAS) software applications were evaluated. For the analysis of interviews, field notes, and video data generated during data collection, an application which enabled researchers to sort, classify, arrange, annotate, and identify relationships between data was essential. Transana 2.41, developed at the University of Wisconsin-Madison Center for Education Research, was chosen as a low-cost, open-source solution. Following the work of Seedhouse and Almutairi (2009) in TBLT research and Jewitt (2013) and Bezemer and Mavers (2011) in the wider context of educational research, analysis of data collected from CAMELOT's variety of online immersive environments will adopt a multimodal approach.

While numerous definitions of multimodality exist (Kress, 2010), it originated in particular from the work of Halliday (1975, 1978) who stressed the social nature of language production and meaning (a social semiotic system) rather than viewing it as a static linguistic system. Jewitt (2013) also provides a succinct definition of multimodality that is relevant to the CAMELOT project:

Multimodality is an interdisciplinary approach drawn from social semiotics that understands communication and representation as more than language and attends systematically to the social interpretation of a range of forms of making meaning. (p. 250)

In this definition, there is an implicit challenge to the hegemony attributed to written and spoken discourse in research on learner collaboration and the need to recognize a range of other modes of communication such as gesture, images, sound, posture, and gaze. As Jewitt (2013) continues:

Multimodality emphasizes *situated action*—that is, the importance of the social context and the resources available for meaning making, with attention to people's situated choice of resources, rather than emphasizing the system of available resources. Thus it opens up possibilities for recognizing, analyzing and theorizing the different ways in which people make meaning and how those meanings are interrelated. (p. 250)

Data analysis approaches informed by multimodality attempt to understand the complexity of learner interactions based on a sensitive and fine-grained process. The analysis of situated action focuses on:

artifacts and interactions in which meaning is understood as being realized in the iterative connection between the meaning potential of a material semiotic artifact, the meaning potential of the social and cultural environment it is encountered in and the resources, intentions and knowledge that people bring to that encounter. (p. 251)

A multimodal approach, then, is based on a number of assumptions. These include:

1. The idea that while language is one of the most significant forms of communication, it is not the only one. Language therefore needs to be studied as part of a constellation of other factors such as gesture and nonverbal communication.
2. All social activities and forms of communication are produced in social contexts.
3. While communication has always been multimodal, digital technologies enable researchers to consider more complex relationships between different modes.

Jewitt refers to the need to combine modes in a “multimodal ensemble” (p. 255). Similarly, given the overemphasis of quantitative, lab-based experimental studies on project and task-based learning, Seedhouse and Almutairi’s (2009) multimodal approach attempts to provide a more complex understanding of the interplay of variables in the specific context. As Jewitt suggests, then:

Multimodal research attends to the interplay between modes to look at the specific work of each mode and how each mode interacts with and contributes to the others in the multimodal ensemble. This raises analytical questions, such as which modes have been included or excluded, the function of each mode, how meanings have been distributed across modes and what the communicative effect of a different choice would be. (p. 255)

Multimodality can therefore be used in a variety of ways. Using conversation analysis (CA), which developed via a focus on embodied interaction rather than merely talk-in-interaction, other variants such as avatar-mediated interaction (Moore, 2013) have emerged to study human interaction and collaboration in digitally mediated virtual environments. One potential challenge related to CA, as indicated by Seedhouse and Almutairi (2009), is that transcripts of talk may

not accurately record all relevant data in a collaborative, project-driven classroom context. In order to triangulate the approach, the data may be supplemented by learner perspectives. CA can be used to “analyze a field of local possibilities for action” (Have, 1999, p. 24) by offering an analysis of adjacency pairs—a dyad engaged in talk-in-interaction in which it is possible to see the sequence of interaction. By focusing on a range of aspects of talk, including overlapping utterances, pauses used by speakers, and emphasis, it may be possible to investigate how learners engaged in collaborative project-mediated language learning such as machinima creation also engage in co-constructing the task-in-process through learner talk and interpretation, as well through physical movement and gestures.

Samuda and Bygate (2008, pp. 85–86) identify three dimensions associated with task-based research: (a) systemic versus process, (b) macro versus micro, and (c) quantitative versus qualitative. They raise several potential weaknesses of systemic approaches including that the snapshot approach may arise from the “inferences” of the researcher and “become disembodied from the context which yielded the data” and data might not be clear and is rather “difficult to understand” (p. 87). Researchers are therefore directly concerned in process studies with concentrating on “what one or more learners or teachers do prior to, while engaged on or after doing one of more tasks” (p. 87). Thus the aim is to “understand how learners and/or teachers use particular activities in order to complete them, and to promote learning” (*ibid.*). They do this by “tracking learners’ individual and joint behaviours moment by moment, in order to derive a picture of how tasks are accomplished” (*ibid.*). The benefit of this approach is that it focuses on the “dynamics of tasks” and findings can be connected to “activities and episodes occurring within their classrooms, and the findings can therefore inform their use of materials” (*ibid.*).

According to this nomenclature, the CAMELOT project is therefore a *process-oriented* study involving a group of students (macrolevel) that focuses on dyads within the group (microlevel). As Samuda and Bygate (2008) suggest, “most (though by no means all) of the process research has been undertaken through micro qualitative studies” (p. 88). It is important to understand how learners process the tasks and proceed through them. Process-oriented research studies focus in particular on examining learners’ collaborative strategies, often associated with socioconstructivist theory that examine “how learners make sense of, structure and negotiate their way through an activity towards its completion” (*ibid.*). Of particular interest to CAMELOT is the work of Duff (1993) and Coughlan and Duff (1994) that examined how students and learners engaged in a reinterpretation of the tasks during the process stage. Moreover, Samuda (2001) developed a case study in which learner engagement with a task was tracked through its different phases of development. Process studies tend to focus on individual or groups of learners and their trajectory during task performance, focusing therefore on the differences between *workplan* and *task-in-process*. Process studies’ close attention to pairs of learners also shows how they support or scaffold one another through the task in a particular project.

5. Summary

CAMELOT responds to the EU Lisbon Key Competences by emphasizing the importance of creating synergies between language learning, digital technologies, and intercultural communication. The project's firm emphasis on open educational resources aims to make the results and products available to a wider variety of European educators, trainers, and learners in order to aid cultural integration, acceptance of diversity, and promote mutual understanding. The project recognizes the need to find new ways to motivate language learners and to engage them in a variety of related skills in order to move language learning to the center of the curriculum across a range of educational sectors. By utilizing project-based pedagogies involving technology-mediated communication, CAMELOT aims to motivate learners, stimulating them to see learning as an authentic process that has real-world implications and aiding policies aimed at encouraging the free movement of labor and expertise across the European zone.

CAMELOT aims to empower teachers and to emphasize that innovation in education using digital technologies needs to be based on effective teacher training. The teacher training course will develop over two iterations and enable teachers and learners to use mobile applications to access interactive learning materials. The project aids cross-partner cooperation among participants from the seven member states and has grown a network to include an additional 30 members. Language learning is a strategic priority in EU education policy, and CAMELOT aims to foster innovations and synergies across four educational sectors promoting the informed use of new media and technologies to make EU-based language learning fit for the 21st century. CAMELOT engages a diverse community of educators, promoting cooperation among teachers, teacher trainers, policy makers, and administrators and learning technologists in order to highlight the value of digital video as a powerful resource for creativity and collaboration.

The project produces documents and products in multiple European languages to facilitate the creative use of digital video production know-how for a community of language teachers, teacher trainers, and learners. Above all, CAMELOT's strong commitment to open educational resources, open access learning, and Creative Commons licensing means that it will be able to involve educators from a variety of contexts. Although significant EU resources have been devoted to digital educational technologies, it continues to be an area that requires more planning and strategy and fewer ad hoc and temporary solutions. CAMELOT recognizes the strategic priority of developing e-Learning resources that lower the barriers to entry for teachers of different generations and can be created easily and cheaply across the member states. Access and increased social mobility are central to effective e-Learning and CAMELOT promotes these values alongside widening participation and inclusivity by developing mobile and blended learning solutions. Developing a language learning approach that is underpinned by widening participation, inclusivity, and social integration, CAMELOT contributes to the EU's aim of creating a digitally literate workforce that is comfortable in communicating with other cultures using a variety of technology-mediated communication channels. It promotes cooperation and active approaches to teaching,

learning, and researching languages in which the participants act as multipliers within their own organizations as well as regional, national, and international networks. Above all, it aims to contribute to research on technology-mediated PBL by developing an innovative approach that is process oriented and qualitative in orientation and emphasizes the importance of multimodality to capture a holistic view of learner interaction and collaboration.

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Chapter 9

Task-Based Investigation of Learner Perceptions: Affordances of Video-Based eTandem Learning

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Summary

This study examines perceived affordances of eTandem learning, namely a type of telecollaboration where pairs of language learners reciprocally teach and learn each other's language and culture. The participants in this study were 12 students of English in Japan and 12 students of Japanese in the US who engaged in seven *Skype* sessions over a semester. The perception data was collected by engaging each dyad in an opinion-sharing task in which they discussed what would make an ideal language exchange project considering their experience with the current project. In addition, in order to investigate how potential affordances led to actual affordances (van Lier, 2004), longitudinal interaction data in Japanese were analyzed. The analysis of the perception data revealed several common themes that created potential affordances of eTandem: reciprocity, one-on-one interaction with same-age peers, semistructured language learning outside the classroom, and computer-mediated interaction. However, the analysis of the actual interaction data revealed that not all the participants managed to utilize the potential affordances (e.g., multimodal interaction and corrective feedback). Regarding language learning, the study found a potential relationship between increased first language awareness, tutor identity, and increased investment. It was also found that eTandem was perceived to afford the expansion of discourse options and increased awareness of sociolinguistic variations. Finally, several new research directions will be proposed, especially calling for the investigation of individual differences from both social and cognitive approaches.

1. Introduction

It has been well established in language education literature that highly conventionalized discourse in the classroom often inhibits both the quantity and the quality of learners' participation (Belz & Kinginger, 2002). Telecollaboration is a way to engage second language (L2) learners in an organized partnership, linking language learners in one part of the world with learners in other parts of the world, and it is often defined as "institutionalized, electronically mediated intercultural

communication under the guidance of a languacultural expert (i.e., a teacher) for the purposes of second language learning and the development of intercultural competence” (Belz, 2003, p. 2).

Until recently, the research base of telecollaboration was generally bound to immediate practical concerns (e.g., what CMC tools to use; what models of telecollaboration to follow). However, the current scope of research has been extended to studies that are based on theories of second language acquisition (SLA). For instance, cognitive-interactionists, mainly in the framework of focus on form (FonF), have examined telecollaboration for corrective feedback (Sauro, 2013; Vinagre & Muñoz, 2011; Ware & O’Dowd, 2008; Ware & Pérez-Cañado, 2007), negotiation for meaning (Bower & Kawaguchi, 2011; Kötter, 2003; O’Rourke, 2005), and tasks that elicit negotiated interaction (Hauck & Youngs, 2008). On the other hand, socially oriented researchers have examined telecollaboration for collaborative scaffolding (Lee, 2008), linguistic affordances (Ahn, 2012; Darhower, 2008), and the development of pragmatic competence (e.g., Belz, 2007; Cunningham & Vyatkina, 2012).

Another strand of telecollaboration research examines the development of intercultural competence (ICC). ICC consists of four interrelated components: knowledge, skills, attitudes, and awareness (Byram, 1997). In order for this competence to develop, learners need to engage in social interaction that promotes “in-depth cultural learning that goes beyond the superficial ‘facts only’ approach” (Lee & Markey, 2014, p. 3). Previous studies on ICC have found a potential role of telecollaboration to help learners (a) become more tolerant of people of other cultures, (b) critically reflect upon cultural similarities and differences and (c) develop cross-cultural awareness through personal discovery (e.g., Belz, 2003; Lee, 2012; Ware & Kramsch, 2005).

Despite these positive findings, several major pitfalls of telecollaboration have been reported. For instance, O’Dowd and Ritter (2006) and Ware and Kramsch (2005) reported on intercultural misunderstanding as a result of telecollaboration. It was also found that telecollaboration is often hindered by institutional constraints such as misalignment of academic calendars and scheduling conflicts (Belz & Müller-Hartmann, 2003). Several studies also found a dichotomy between the desire of participants to be corrected and the lack of correction in the actual interaction (Lee, 2008, 2012; O’Rourke, 2005; Schwienhorst, 2000). Accordingly, O’Dowd and Ware (2009) and Akiyama (2014) called for the development of tasks that can assist the active engagement of learners in FonF.

As the survey of literature above indicates, telecollaboration is perceived as a very complex learning context that requires investigation from different theoretical perspectives (O’Dowd & Ware, 2009). For the further development of telecollaboration projects and the establishment of telecollaboration as a field of rigorous empirical research, it is imperative that more studies examine telecollaboration from various theoretical perspectives in an integrative manner. In order to propose research directions that are capable of incorporating various theoretical perspectives and “bridging the gap” (Hulstijn et al., 2014), the current study examines perceived affordances of a video-based eTandem project between 12 English as a

foreign language (EFL) learners in Japan and 12 Japanese as a foreign language (JFL) learners in the US. Additionally, this study analyzes the actual interaction data in relation to perceived affordances by focusing on: (a) between-subject differences and (b) differences between perception and actual interaction. In so doing, the study intends to propose where future telecollaboration studies are headed.

2. Literature Review

2.1 Affordances

Affordance theory states that the world is perceived in terms of object possibilities for action (i.e., affordances) and that perception of the environment inevitably leads to some course of action (Gibson, 1979). The theory thus emphasizes the importance of perception as a driving force of action. In natural environments, an affordance arises when an actor perceives the action possibilities of an object (e.g., a metal plate on a door affords pushing, while a door knob affords turning). Affordances thus indicate possible relationships between an organism and an object.

In language learning, an affordance is defined as “a relationship between an organism [a language learner in our case] and the environment that signals an opportunity for or inhibition of action,” namely “something that is available for a language learner to do something with, or something the environment ‘*provides or furnishes, either for good or ill*’ (italics in original)” (Gibson, 1979, as cited in van Lier, 2004, p. 4). According to van Lier, four levels of affordances exist: (Level 1) an “unmediated” relationship that provides potential affordances, (Level 2) an affordance that is noticed by the organism, (Level 3) an affordance that is actively controlled by the organism, and (Level 4) an affordance that provides a critical perspective.

Following the theory of affordances, Darhower (2008) examined telecollaborative interaction via text chats to identify the frequency and level of linguistic affordance, or “discursive move that provides linguistic information to a learner or that intends or appears to activate a learner’s awareness of specific language structures and/or lexical meaning” (p. 50). He found that the semiotic budget in his telecollaboration project was “rich in terms of potential (Level 1) affordances, but somewhat impoverished in terms of potential affordances becoming (Level 2) affordances” (Darhower, 2008, p. 64).

While Darhower’s (2008) analysis was solely focused on linguistic affordances offered by text-based telecollaboration, we would certainly benefit from examining a wider range of affordances for “the increase in self confidence, the acquisition of medium-appropriate register of English [L2], the skillful representation of self, the ability to play multiple roles and adopt multiple voices,” which are all considered part of SLA (Lam & Kramsch, 2003, p. 156). As such, the current study employs the framework of affordances, a construct that places importance on learner perception and can potentially integrate various theories of SLA, to examine a wide range of affordances for the development of a L2 and ICC.

2.2 eTandem Learning

eTandem is a type of telecollaboration in which pairs of learners who are native/near-native speakers of each other's target languages team up and help each other learn the languages and cultures (O'Rourke, 2007). eTandem is characterized by the principles of reciprocity and learner autonomy (Appel & Mullen, 2000), giving learners opportunities to alternate between the language "expert" role and language learner role (Darhower, 2008). Thus, eTandem participants are expected to show interest in one another not only as a source of L2 input but also as individuals who share the responsibility of equally contributing to one another's learning (O'Rourke, 2005).

In comparison with eTandem that utilizes text-based mediums (e.g., emails, text chats), there is a lack of publications on video-based eTandem.¹ One study that investigated video-based eTandem is the study by Tian and Wang (2010). Using survey and interview data, the study examined eTandem participants in China and Australia regarding their perceived gains in language learning and increase in intercultural understanding. The study found that the exchange was helpful overall for improving the linguistic and intercultural competence of the students, but the difference in proficiency between the two groups mediated the degree of perceived gains.

Although Tian and Wang's study (2010) may not have strong theoretical underpinnings, it makes a significant contribution as one of the only studies that reported on a *Skype*-based eTandem project that took place outside the classroom. That is, in contrast to the majority of studies that are asynchronously and/or synchronously text-based and, if synchronous, take place in languacultural experts' presence, Tian and Wang studied a telecollaborative set-up in its most autonomous form in that students took responsibility for their own and their partner's learning (Little et al., 1999) and communicated with their partner without instructors' monitoring. Along this line of research, the present study investigates a video-based eTandem project between Japan and the US, which represents one of the most autonomous and challenging telecollaborative set-ups that requires a great amount of learner engagement.

3. The Current Study

3.1 Research Questions (RQs)

1. What are perceived affordances of a video-based eTandem project between Japan and the US?
2. To what extent do participants in actual interaction utilize the perceived affordances?

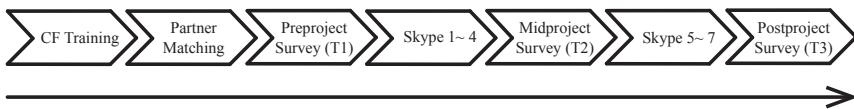
3.2 Method

3.2.1 Participants. The participants in this project were 12 JFL learners in the US who were native/near-native speakers of English and 12 EFL learners in Japan whose first language (L1) was Japanese. The JFL learners were enrolled in an in-

tensive Japanese language course and the *Skype* project was intended to serve as a link to connect the two communities before the American counterparts visited Japan in the summer. The project accounted for 5% of the course grade. When they completed the semester-long intensive Japanese course, these learners, on average, were rated as intermediate-low on the Oral Proficiency Interview by the American Council on the Teaching of Foreign Languages. The EFL students in Japan, on the other hand, were not enrolled in an English course at the time of data collection. They were volunteer language exchange partners who had taken a two-unit telecollaboration course in the previous semester and who had expressed a desire to continue with the project.

3.2.2 Procedure. The data in this study come from a video-based, semester-long eTandem project. Time zone differences made it difficult to conduct *Skype* sessions in class, so the participants met their partners outside the classroom on designated weekends. There were seven biweekly *Skype* sessions in the semester. In addition, there was one face-to-face session when the American counterparts visited Japan for a 2-week summer course. For each hour-long session, the participants spent half the time talking in Japanese and the other half in English. Regular sessions started with free conversation and then moved onto a task-based conversation. This study used a wide range of tasks of different types (e.g., problem solving and decision making) and themes (e.g., annual events, trips, and homestays). For more information about tasks, see Akiyama (2014), which investigated the effects of tasks on FonF practices of the same group of learners investigated in this study. Figure 1 shows the overall procedure of the study.

Figure 1
Overall Schedule of the Current Project



Because “error correction is the central overtly pedagogical element of a tandem partnership” (Little et al, 1999, p. 39), the participants underwent a 2-hour corrective feedback training workshop at the very beginning of the project that was led by the researcher/instructor. The training consisted of a 1-hour corrective feedback workshop and a 1-hour webinar. In the workshop, the participants practiced six feedback methods (recasts, metalinguistic explanations, explicit correction, repetitions, clarification requests, and confirmation checks) based on Lyster and Ranta (1997), until all the participants were able to use them skillfully. Both the American and Japanese participants underwent the same training, but in Japan the participants were trained when they took the two-unit telecollaboration course with the researcher in Japan during the previous semester. In order to refresh their memories after the workshop, both the American and Japanese participants accessed an hour-long webinar and completed a short quiz. Although error correc-

tion was not a requirement, the participants were strongly encouraged to provide corrective feedback and were constantly reminded to do so throughout the semester.

3.2.3 Data collection. In order to elicit in-depth perception data about perceived affordances of a video-based eTandem project without interviewer intervention (RQ 1), this study used a decision-making task for the sole purpose of eliciting perception data (see Appendix for the actual task). It did so by asking each telecollaborative pair to spend the hour-long, final *Skype* session (Session 7) discussing their ideal tandem session (30 minutes in Japanese and 30 minutes in English). They were asked to (a) state their opinions about the ideal set-up/method of eTandem and reasons for thinking so and (b) provide concrete examples from their own experience particularly by comparing eTandem with other learning contexts (e.g., classroom instruction). In order to compare perceived affordances with actual interaction (RQ 2), the study also collected the interaction data of Session 1-6. The interaction data was audiorecorded by each participant using recording devices such as an iPhone, Audacity, and Vocaroo (<http://vocaroo.com>).

3.2.4 Data analysis. The ideal tandem session data (Session 7) were transcribed and analyzed using MAXQDA11, a program for analyzing qualitative and mixed methods data. Based on Grounded Theory, the data were coded for broad themes that emerged regarding perceived affordances. The researcher continued to refine further subthemes by reading and rereading the text until coherent subcategories were identified. For the final phase of the analysis, the researcher created a visual diagram to conceptually represent the affordance network. The frequency of participants' utterances was included in the network to indicate the frequency distribution.

After completing the analysis of the qualitative data, the researcher listened to the interaction data of the 12 pairs of participants. This study only looked at the interaction data in Japanese, considering that the interaction data of the JFL participants (who had less experience with telecollaboration than the EFL counterparts) would provide insights into what kind of interaction would take place for relatively inexperienced telecollaborators. Japanese interaction in each session lasted about 30 minutes, but the 10 minutes in the middle of the Japanese interaction, when the participants would be engaged in the task most actively, were analyzed. Since 10 minutes were analyzed for each telecollaborative pair for Sessions 1-6, 720 minutes of interaction data in total was analyzed for the purpose of comparing learner perception with actual interaction. While listening, the researcher jotted down instances that were in accordance with or were contradictory to learners' perceptions.

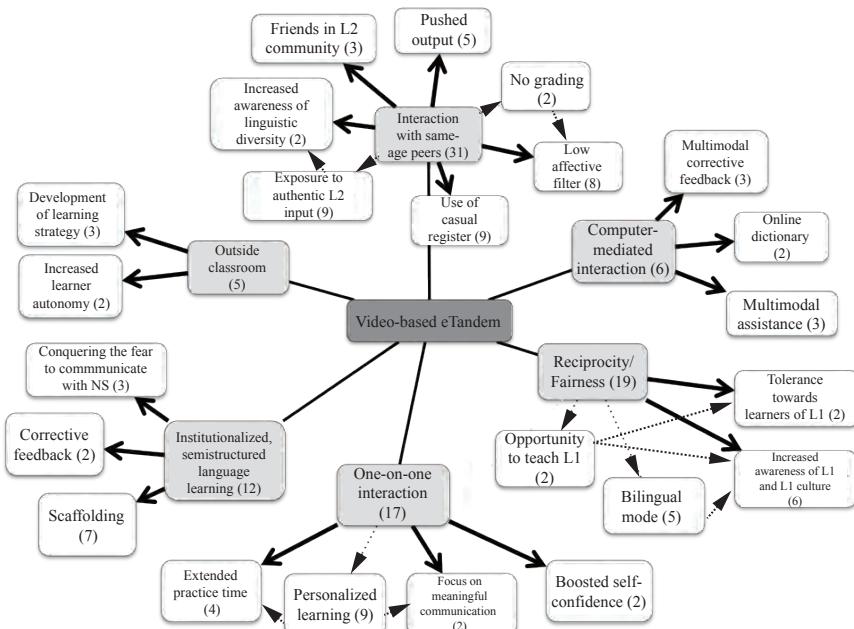
4. Results

The analysis of the perception data revealed that six major features of the current project provided potential affordances (Level 1) for language and ICC de-

velopment: (a) reciprocity, (b) interaction with same-age peers, (c) one-on-one interaction, (d) institutionalized, semistructured language learning, (e) interaction outside the classroom/minimal amount of teacher involvement, and (f) computer-mediated interaction. The analysis of the interaction data revealed that some participants noticed these potential affordances (Level 2 affordance) and even demonstrated an active control of the awareness (Level 3 affordance). This section describes the six features and resulting affordances and presents relevant interaction data in order to compare learner perceptions with actual interaction.

Figure 2 below summarizes perceived affordances of eTandem. The arrows indicate potential affordances that were offered by the six features of eTandem learning. The dotted lines indicate mediating factors between the six eTandem features and potential affordances. The number in parenthesis indicates frequency distribution. In the discussion following Figure 2, perceived affordances and mediating factors listed in the figure are italicized.

Figure 2
Perceived Affordances and Mediating Factors of Video-Based eTandem



4.1 Reciprocity

First, the nature of reciprocity/fairness created a “win-win” situation of *bilingualism* that was fair to both parties. An EFL learner remarked, “We are both teachers. It is fair. I don’t have to worry about the time I spend for speaking English because I will spend the same time for speaking Japanese.” Another EFL participant mentioned that such two-way interaction was a great opportunity to teach and “understand what difficulties my partner feels in studying my own language.”

Such *increased awareness of L1 and L1 culture* as a result of teaching one's own language promoted *tolerance towards L2 learners*. One EFL participant said, "We can be more tolerant to foreigners." Another EFL participant remarked, "We can think about our own language more deeply. Language exchange made me learn more about Japanese ... I realized that teaching Japanese is not the same as speaking Japanese. My thoughts about Japanese are becoming deeper."

4.2 Interaction with Same-Age Peers

Interaction with a partner of a similar age provided an opportunity to receive *authentic input* from virtual *friends* on the other side of the world. A JFL participant said, "we have the opportunity to learn about the subtleties in each other's languages, the kind of language that you wouldn't normally learn in a classroom setting." A JFL participant also emphasized the importance of "being able to use Japanese for casual, everyday communication instead of drilling," because it was the very first time that this particular JFL learner had used the *casual register* in real-life situations. For learners of languages like Japanese, a language in which linguistic forms change depending on formality, online interaction with same-age peers was perceived as a valuable venue to practice the casual register.

However, the analysis of actual interaction revealed that some JFL participants rarely used the casual register, despite their partner's use of it. In fact, although the Japanese native speakers' use of such casual register increased towards the end of the semester, when the participants were more familiar/comfortable with each other, such a shift in formality did not take place as evidently for JFL learners. The following excerpts were taken from one of the 12 pairs. Excerpt 1 is from *Skype* session 2 when participants were not yet so comfortable with each other. Excerpt 2 is from *Skype* session 6, by which time they were much more familiar with one another. The comparison of the two excerpts reveals that the native speaker (NS) shifted his register according to his level of comfort, yet the non-native speaker (NNS) kept using the formal register throughout the semester, indicating the lack of awareness (Level 2 affordance) or an active control of the register (Level 3 affordance). The asymmetrical use of formal and casual registers between NSs and NNSs was so prevalent that more than half of the pairs engaged in such interaction in Japanese.

Excerpt 1 (*Skype* 2)

NS: ドーナツ好きですか? (Do you like donuts? [casual → formal])

NNS: いえ、あまり好きじゃないです。 (No, I don't like it that much.
[formal])

NS: あ、そうなんですね。 (I see. [formal])

NNS: はい。 (Yes. [formal])

Excerpt 2: (*Skype* 6)

NNS: これは1万円で、900 g です。 (This is 10,000 yen and 900 grams.
[formal])

NS: じゃあ、ちっちゃいんだ。 (Oh, then it's tiny. [casual])

NNS: もう一度言ってください。(Pardon me? [formal])
 NS: 結構小さいの？(Is it quite small? [casual])
 NNS: はい。(Yes. [formal])

Communicating with same-age peers also afforded the experience of “[being] forced to improvise and create non-template sentences.” Such an immersion environment, in which systematic scaffolding by a partner was often unavailable, caused the learners to use the L2 creatively. One JFL participant commented on so-called *pushed output* and said, “I like how it forces you to use what you know to communicate, since in a classroom setting, you’re more likely to resort to your native language since the teacher will understand either way.”

Excerpt 3 below shows how the NNS fully utilized what she knew to get the meaning across. This is in contrast to a classroom setting in which learners tend to resort to their L1 due to the embarrassment of making a mistake in front of the class. In this example, a JFL learner, who could not express “In order not to gain weight, I am careful with what I eat, as I do not like exercising,” broke down the complex sentence into a single sentence, “I do not like exercising” followed by “*I am not become fat. Food … I am careful.” The NS, who understood the NNS’ message, reformulated the sentences into an accurate and more complex version.

Excerpt 3:

NS: Jasmineは結構体に気を使っているんですか。(Jasmine, it seems like you care about your health.)
 NNS: まあまあ。運動するのが好きじゃない。(Not really. I don’t like exercising.)
 NS: はいはいはい。(Ah, I see.)
 NNS: でも、えっと、太ってなりません。食べ物は careful? (But, well, *I am not become fat. Food … careful?)
 NS: あ、なるほど。(Oh, I see.)
 NNS: はは。(Haha)
 NS: ってことは、正しい日本語に直すと、「運動をしないので、太らないように するためには」(So, if I were to change this into correct Japanese, it would be “because I do not exercise, in order not to gain weight…”)
 NNS: はい。(Yes.)
 NS: 食べ物に気を使わなければいけない」(I have to be careful about what I eat.)
 NNS: はい、そうです。(Yes, that’s right.)

Regarding the affective dimension of eTandem, eight participants mentioned that talking with a same-age friend, who was not in a position to *grade* their performance, helped *lower the affective filter* and created a learning context that was “less nerve-wracking/awkward” and “free and relaxing.” However, there were also some pairs who expressed their frustration because of the many communication breakdowns and blamed themselves for lacking sufficient L2 proficiency. Although the analysis of the interaction data cannot reveal levels of anxiety, many

instances of laughing/joking/off-task interaction that indicated participants' enjoyment (Dewaele & MacIntyre, 2014) were observed. On the other hand, many instances of communication breakdown, which could increase the level of anxiety, were also observed.

Two EFL participants mentioned that interacting with their partner helped increase *awareness of the linguistic diversity in the L2 community* because they realized that there were many variations of the L2 that they were not exposed to in class (e.g., structures that are excluded or deemed ungrammatical in textbooks but that are used by NSs, slang, dialectal variations). In contrast to a classroom setting in which the language that a teacher speaks often becomes the standard, exposure to different variations of the L2 opened participants' eyes to the complexity of the L2 speech community. In Excerpt 4, a Japanese learner asked about a phrase that he had never heard. Then, the conversation was extended and became a discussion about dialectal variations in the Japanese language.

Excerpt 4:

NS: うん、最近はめっちゃ忙しいかな。(Yeah, I am [meccha] extremely busy.)

NNS: めっちゃ? ([meccha?] Extremely?)

NS: うん。「とても」と同じ。(Oh, it is the same as *very*.)

NNS: 聞いたことがありません。(I had never heard of that.)

NS: そつか！これは元々は関西の方言だったんだけど、最近は関東でも使うんだよ。(Right, this was originally used by people in the Kansai region, but these days, it is used by people in Kanto, too.)

NNS: 田中さんはdialectありますか。(Do you have a dialect?)

NS: 僕は元々大阪の出身なので、大阪弁を話します。(Because I am from Osaka, I speak the Osaka dialect.)

NNS: あの、大阪弁はたくさん違うか。(Well, does it differ a lot?)

NS: そうですね。かなり違うかな。でも、大阪の人はだいたい標準語も話せますよ。(Yes, I think it differs quite a lot. But, people from Osaka can speak the standard language, too.)

4.3 One-to-One Interaction

Many participants talked positively about the one-on-one, meaningful interaction in which each participant received the full attention of his/her partner. This was in contrast to a classroom setting in which "teachers must teach many students at once." *Personalization* of one's learning afforded valuable opportunities to use their L2 over an *extended period of time* and to *focus on meaningful communication*. Such an exchange differs greatly from those in a classroom setting, in which instruction is often structured around language forms, especially for elementary- and intermediate-level L2 learners. One JFL participant stated that the tandem project boosted his *self confidence* in speaking because he was "given more flexibility and freedom" in what he could talk about and because he "managed to survive" the one-on-one communication.

4.4 Institutionalized, Semistructured Language Learning

The current project, which was offered as part of language instruction, was semistructured, namely, the project allowed some freedom yet provided structural support. The structural support provided by the coordinator/teacher such as task setting and feedback on *Skype* sessions was perceived positively by those who “would have been too scared” to talk to NSs on their own. One JFL participant said, “unlike when you talk to a native speaker, you are provided with resources for the exchange. This gives you a chance to prepare, so I wasn’t so nervous.” Thus, the semistructured set-up of the project allowed some participants to conquer the fear of communicating with NSs.

Some of the participants also reported that they received a great amount of *scaffolding* from their partner. One EFL learner mentioned that her partner talked slowly enough for her to understand and used relatively simple words and grammar. Another JFL participant pointed out that “the obvious difference” between telecollaboration and a casual conversation with a NS is that “the partner will make a greater attempt to ensure that you understand because it is a part of language class and because we both share the same goal and want to improve our language skills.”

The semistructured set-up and the feedback training prepared the participants to take on the role of tutors/learners and provide/respond to *corrective feedback*. One JFL participant remarked, “it was very helpful that I was corrected on my word usage errors because I wanted to learn the authentic way to say things.” In fact, the analysis of the interaction data revealed that the majority of the participants engaged in some error correction through explicit correction, recasts (i.e., reformulation of an erroneous utterance into a correct utterance), and multilevel scaffolding (Aljaafreh & Lantolf, 1994) (see Excerpts 5 and 6).

Excerpt 5 (recasts):

NNS: 先生は日本の大学生は*あまり勉強すると言っています

た。(Sensei said that college students in Japan *do not study never.)

NS: あまり勉強しないと言っていましたか。(She said we don’t study
so much?)

NNS: はい。本当ですか。(Yes. Is that true?)

Excerpt 6 (multilevel scaffolding)

NNS: アメリカの食べ物は*太ってになります。(American food *be-
comes me fat.)

NS: うん？もう一回いいですか。アメリカの食べ物は？(Hah? Can
you say that again? American food...?)

NNS: えっと、アメリカの食べ物は太ってになります。(Well... Amer-
ican food *becomes me fat.)

NS: ああ、なるほど、なるほど。(Ah, I see, I see.)

NNS: アメリカの食べ物を食べます。そして。(I eat American food,
and ...)

NS: アメリカの食べ物を食べると。(When I eat American food.)

NNS: 太りやすいです。 (I easily gain weight.)

NS: うん、アメリカの食べ物を食べると、太ります。 (Yes, when I eat American food, I easily gain weight.)

NNS: 太ります。 (I gain weight.)

NS: そうですね。だから、アメリカの食べ物は太りやすい。 (Yes, so, American food easily makes me gain weight.)

NNS: はい、アメリカの食べ物は太りやすいです。 (Yes, American food easily makes me gain weight.)

NS: なるほど。 そうなんですね。 (Ah, I see!)

However, the analysis of the interaction revealed that there were many cases where errors were ignored as long as they did not disrupt communication. One EFL participant said, “it was difficult to correct errors because I didn’t know when to correct what errors. I didn’t want to stop the flow of conversation.” Another participant mentioned that “language exchange is not for learning new structures but for simply practicing what we already know. Plus, we cannot expect so much from being corrected. Sometimes it is hard to notice when I am being corrected.” This indicates that some participants faced challenges in noticing corrective feedback (Level 2 affordance), which resulted in the lack of perceived improvement of L2.

4.5 Interaction Outside the Classroom/Minimal Amount of Teacher Involvement

The current eTandem project, which took place outside the classroom, and therefore outside the teacher’s presence, afforded the chance for participants to develop *learner autonomy*, namely the ability to take responsibility for one’s own learning (Little, 1991). For example, one EFL participant raised the importance of being an “independent” learner and of finding “the right way” to learn a language. She said, “In Japan, students are very passive. I did not know how to study English by myself. This project changed the way I approach English.” Another EFL participant thought eTandem “provided a unique way to learn a foreign language” because it provided a fair amount of “freedom.”

Furthermore, a few participants reported on gains in *learning strategies* such as social skills for developing networks and compensatory skills such as using circumlocutions (Oxford, 1990; Rubin, 1975). One JFL participant indeed could not believe that she made such a great friend outside the classroom because she was not confident enough to “communicate with a stranger considering her social or language skills.” This indicates that eTandem, which involved the least amount of teacher involvement and less scaffolding than regular language instruction, helped participants develop learning strategies on their own initiative.

4.6 Computer-Mediated Interaction

Computer-mediated interaction afforded a number of features that a face-to-face exchange would not be able to offer. First, the use of an *online dictionary* during tandem interaction prevented participants from experiencing an excessive

amount of communication breakdown due to the lack of lexical knowledge. In this project, the use of dictionaries during interaction was not encouraged, so that the participants would focus on meaning negotiation. However, the use of online dictionaries was prevalent and, in some cases, helped reduce the amount of frustration. One EFL participant said, “Because I don’t know so many English words, *Google Translate* was very helpful. I think it helped me learn new words and communicate better. I didn’t feel so helpless.”

Skype also afforded *multimodal corrective feedback*, allowing the participants to use the written mode of communication in addition to the video. One JFL participant pointed out the importance of “reinforcing input” using the text chat. She remarked, “I sent text messages when it was hard to correct pronunciation errors. I think *Skype* was good for that.” Excerpt 7 comes from Akiyama (2014). It shows how a NS used the text chat function of *Skype* to correct his partner’s pronunciation error. For more examples of how learners utilize the text chat function, see Akiyama (2014).

Excerpt 7 (use of text chat for providing corrective feedback):

NNS: あと、*かじゅのリミットもあります。 (Also, there is the */kaju/ limit.)

NS: かずね? (/kazu/ (number), right?)

NS (TEXT): かず (text: /kazu/)

NNS: かず?いえ、かずじやない。*かじゅです。 (/Kazu/? No, it’s not /kazu/ but */kaju/.)

NS: ああ、荷重ね? 重さね? 荷重。 (Oh you mean, /kaju:/? Weight, right?)

NNS: 荷重。 (/Kaju:/)

NS: 荷重。うん、weightね。 (/Kaju:/ . Yeah, weight.)

NNS: right. 荷重, not かず。 (Right. /Kaju:/, not /kazu/.)

NS (TEXT): 荷重。 (text: /kaju:/)

Skype’s text chat function also allowed participants to provide *multimodal assistance* in the form of web links (e.g., *Google* image links). An EFL participant mentioned that she tried to help her partner by showing visuals as much as possible. In sum, the analysis of the interaction data revealed that various functions of *Skype* were used by some participants to help their partner learn the L2.

5. Discussion and Future Direction

The current study investigated the perceptions of 24 participants regarding affordances of a video-based eTandem project. The results revealed that the current project offered a number of potential affordances that might facilitate the development of language and ICC, although not all the participants utilized the affordances to the same extent.

First, the reciprocal nature of telecollaboration afforded an opportunity for increasing L1 awareness, which led to higher tolerance for “foreigners” (i.e., learners of one’s own language). This result indicates that sharing an identity as language learners who are learning each other’s languages may lead to a posi-

tive perception of one other and increased investment in helping one another's learning. Considering that this relationship between learner identity and increased investment has been pointed out in previous SLA studies (e.g., Park, 2007; Tomita & Spada, 2013), it is suggested that future telecollaboration studies also investigate the relationship between increased L1 awareness, shared learner identity, and investment into one another's learning of languages and cultures.

The analysis of the interaction data revealed that only a few participants developed the skills to utilize multimodal scaffolding that was afforded by *Skype* (e.g., text chat or various *Google* sites). A typical explanation for the difference may be the degree of familiarity with instructional technology. Yet, it is also possible that the use of multimodal scaffolding was influenced by the role that the participants assigned to themselves, namely whether they considered themselves a language tutor or a friend/language learner. Accordingly, it seems reasonable that future studies examine the role of participants' identity along with factors that affect its formation.

Next, eTandem allowed some participants to catch a glimpse of the linguistic diversity of the L2 community and also helped them become aware of sociolinguistic variations. To the best of this author's knowledge, there have been no studies that have looked into the development of sociolinguistic awareness from telecollaboration. Future studies may investigate participants' perceptions regarding their experience interacting with speakers of different dialects (e.g., World Englishes) and users of L2 varieties that are not listed as the standard variety in textbooks (e.g., varieties due to age, gender, and socioeconomic status).

It was also found that one-to-one communication with same-age peers afforded the opportunity to expose L2 learners to various registers and to broaden the range of available discourse options. These points are consistent with previous studies that found that social interaction with same-age peers via CMC creates conditions for enhanced L2 performance (Belz, 2003; Belz & Kinginger, 2003; Belz & Vyatkina, 2008; Dussias, 2006; Thorne, 2003; Ware & O'Dowd, 2008). However, the analysis of the Japanese interaction data revealed that about half of the JFL participants did not avail themselves of this opportunity to use the casual register. The three major reasons perhaps are: (a) avoidance, (b) politeness, and (c) lack of friendship/comfort. First, it is possible that some JFL participants decided to use the formal register because it is the register that the participants are more comfortable using because the casual register is rarely used in Japanese language instruction unless the instructor creates an artificial situation to do so. That is, the participants focused on grammatical accuracy over pragmatic appropriateness. The second possibility is that some participants wanted to sound polite, sometimes overly polite, regardless of their interpersonal relationship with their partner. This indicates the possibility of overgeneralization by thinking that the use of the formal register would not offend their partner when, in fact, the use of the formal register can create distance between them and their partner and harm the friendship. Lastly, the use of the formal register may simply indicate that some participants did not feel comfortable enough with their partner to use the casual

register. Whichever reason or combination of reasons it may be, it is suggested that future studies study the longitudinal, microgenetic development of formal versus casual registers among JFL participants (see Belz & Kinginger, 2002, 2003 for examples in German and French).

With regard to ICC development, previous studies have argued that telecollaboration offers a context for ICC development. However, the analysis of the perception data revealed that only a few participants emphasized the role of the current eTandem project for developing ICC. One JFL participant said, "Honestly, I'm not sure how much the language exchange helped me gain intercultural communication skills Yes, I learned a little about Japanese culture from the sessions, but definitely was not focused on learning Japanese culture. My mindset was more focused on mastering usage of the Japanese language and trying to be a good tutor in English, and becoming friends." This comment implies that some of the participants may not have regarded their partner as a cultural ambassador but rather as a language resource and/or a friend who speaks their L2. One possible reason for this is that the tasks used in the current project were focused on *cross-cultural* communication, namely "a study of a particular idea(s) or concept(s) within several cultures that compares one culture to another on the aspect of interest" rather than on *intercultural* communication, or "interactions among people from different cultures" (Kecskes, 2004, pp. 1-2). The focus on the former may have prevented the participants from going beyond the superficial, cultural comparison stage, conquering the "'facts only' approach" (Lee & Markey, 2014, p. 3). Another possible reason is the lack of integration into the core curriculum due to various institutional constraints such as the tight class schedule, the alignment with other classes, etc. This lack of integration deprived the participants from reflecting on their findings and led them to focus on language (i.e., an obvious objective of the course) rather than the development of intercultural communication. As in previous studies that have argued for the importance of teacher involvement in the online learning context because it encompasses complex linguistic and cultural negotiations (e.g., Belz, 2002; Ware & Kramsch, 2005), the current study indicates that we cannot expect language learners to develop ICC by simply exposing participants to their partner. As such, teacher scaffolding seems to be a crucial element that enables participants to interpret, relate, and combine knowledge, skills, and attitudes with which to interact with interlocutors from a different country or culture (Byram, 1997).

Pedagogically, it is recommended that participants engage in sufficient preparation and reflection as part of the curriculum. Specifically, the use of e-portfolios, blogs, and discussion boards seems to be a great way to share learner perspectives (see the *Cultura* project by Furstenberg, Levet, English, & Maillet, 2001, for a model that integrates telecollaboration into classroom teaching). In addition, in order to help participants negotiate cultural differences and similarities at a deeper level, coordinators are advised to create tasks that can facilitate the learning of *how and why* (i.e., *how and why* the two communities are different/similar) rather than *what* (i.e., *what* is different/similar between the two communities) (see

O'Dowd & Ware, 2009, for a list of possible task types). It is also advised that instructors/coordinators teach students how to ask for clarification and elaboration, how to contextualize questions, and how to engage in *how-and-why* negotiations. In addition, in order to measure the depth of negotiation, it could also be useful to ask participants to listen to their own recordings, write down the questions they asked during a session, and analyze the negotiation sequences that followed. Doing this will allow participants to focus on both linguistic and cultural negotiation practices.

In sum, this study found that eTandem allowed participants to move away from the traditional “one-size-fits-all” approach towards personalized language learning/teaching. Or, at least, it showed that telecollaboration has the great potential to supplement the lack of natural input and exam-oriented, decontextualized, drill-based, big classroom instruction (Yang & Chen, 2007). However, it was also revealed that even the personalized learning setting is subject to contextual and individual differences; not all the participants fully utilized the affordances. Thus, the key to successful telecollaboration seems to lie in how much personalization can be achieved in consideration of both external (e.g., learning objectives, contexts, and available resources) and internal factors (e.g., cognitive, conative, and affective individual differences). Future studies may benefit from investigating individual differences that can transform potential affordances into the higher levels of affordances.

6. Limitations

Some limitations are worth bearing in mind when interpreting the present findings. First, the context of telecollaboration and the participants in this study are unique, and generalization/extrapolation from it needs to be made with caution. For instance, findings may change depending on the model of telecollaboration, the tasks employed, and/or the frequency of telecollaborative exchanges. Second, this study allowed a cross-index system and categorized every instance of a theme into emerging categories. Thus, it is possible that the voice of those who talked more is more represented than those who did not talk as much. Nonetheless, this study is unique in that it used a decision-making task to elicit participants' opinions about affordances of telecollaboration without the presence of a researcher. Future studies may benefit from this noninvasive way of data collection as a replacement or supplement of conducting interviews. Third, this study only examined the Japanese interaction data, excluding the analysis of English interaction data. Inclusion of the English data may have provided further insights into the reciprocal nature of eTandem learning. Last but not least, for the purpose of proposing new directions of telecollaboration research that could integrate various theoretical perspectives, the current study employed affordances as the research construct. However, since affordances are often affiliated with the social side of SLA rather than the cognitive side, the study may present a theoretical bias towards the former over the latter.

7. Conclusion

With the increased recognition of the flipped classroom and the criticism of a one-size-fits-all approach, more and more educators, as well as SLA researchers, have started to see the great potential of telecollaboration. As young a field of empirical investigation as it may be, it seems time that telecollaboration researchers more precisely define telecollaboration and explain its particular benefits. For that purpose, this study investigated the perceived affordances of a video-based eTandem project with the aim of proposing new research directions that are capable of integrating various theoretical approaches.

The study found that *Skype*-based tandem learning offered a number of positive affordances that neither casual chats with NSs nor classroom instruction could offer. Future studies may benefit from examining the development of sociolinguistic awareness, use of multimodal scaffolding and corrective feedback, and the relationship between increased L1 awareness and investment in interaction. As for ICC, this study found that not many participants emphasized the importance of ICC compared to language development. This suggests that teachers should be involved in helping participants to interpret, compare, and critically analyze L1 and L2 cultures, especially in the case of those who do not have much intercultural experience.

Overall, this study observed that there were some participants who managed to utilize potential affordances, while others struggled to learn in this personalized, autonomous environment. Accordingly, this study calls for further research that will uncover what results in positive affordances for some but negative affordances for others and what transforms potential affordances into the next levels of affordances. In particular, further investigation into individual differences from both social (e.g., identity and engagement) and cognitive (e.g., personality and motivation) perspectives may advance the field of telecollaboration.

Note

¹ The *Teletandem Project* led by researchers in Brazil deals with a video-based eTandem, but their publications are mostly in non-English languages.

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Appendix

Session 7 Task

Scenario:

Having been experienced in language exchange, you and your partner were assigned as the coordinators of a new project! You and your partner need to negotiate and come up with the “ideal” exchange project and propose it to the department head of your institution.

Tasks:

1. Reflect on the last six sessions with your partner. What did you like/dislike?
What did you learn/want to learn more?
2. State your **opinion** about the following items and provide good **reasons** and **examples** from the last six sessions.

Language: 30 minutes in English → 30 minutes in Japanese

*Today's session is not as strict in language use as the other sessions. Feel free to switch languages if necessary.

FOCUSING ON PARTNERS

What characteristics should an ideal partner school have?

What characteristics should an ideal exchange partner have?

How would you group students? One-on-one? Small groups? Large groups?

FOCUSING ON TECHNOLOGY

What software/technology tools should be used for synchronous communication?
Would you have your students communicate from home or from a language lab?

FOCUSING ON LANGUAGE

What kind of tasks would you employ for language development?
Would you allow mixing the two languages? Or would you strictly divide the two languages by the time?
Would you encourage correcting each other's errors?
What should be the goal of language exchange in terms of language learning?

FOCUSING ON INTERCULTURAL COMMUNICATION

What kind of tasks would you employ for developing intercultural communication skills?
What topics would you have students discuss?
What should be the goal of language exchange in terms of cultural learning?

COMPARISON WITH OTHER LEARNING CONTEXTS

If you were to give an orientation of the project to your students, how would you describe it? How is it different from regular language instruction?
What are some advantages of language exchange?
What are some challenges of language exchange?

Chapter 10

Exercising Learner Agency in Forum Interactions in a Professionally Moderated Language Learning Networking Site

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Summary

The chapter reports on the computer-mediated discourse analysis (CMDA; Herring, 2004, 2013) of asynchronous forum interactions on the language learning social networking site *Deutsch für Dich* ‘German for You’ (henceforth, *DfD*), a platform hosted, moderated, and tutored by the Goethe Institute that is open to any user around the globe. German is both the target language as well as the learners’ common language. In this online community of practice, where learners negotiate questions of language, language learning and culture with professional tutor-moderators, native speakers, and other learners, language learning is conceptualized as a dynamic and interactive process. Because *DfD* allows learners to choose what to learn and how to learn it from a range of options, it can be said to promote learner agency, a concept widely hypothesized to correlate with language learning success (e.g., van Lier, 2008). Using CMDA, this study analyzed to what extent *DfD* discourse yields evidence of learner agency. Specifically, it focuses on features of discourse that indicate that learners exercise agency, that is, planning, initiating, and self-regulating learning, in approaching learning content and in target-language communicative interaction.

1. Language Learner Agency and Web 2.0

As more and more language learners engage in informal language learning online (e.g., on commercial platforms such as *LiveMocha*, *Duolingo* but also noncommercial ones like *Deutsch für dich* by the Goethe Institute), this new trend creates an urgent need in the field to understand how Web 2.0 tools shape language use and social interactions in these second language contexts. To this end, this chapter explores second language (L2) discourse between learners and peers and between learners and tutor-moderators in an informal language learning environment. Specifically, I look at the extent to which L2 forum discussions yield evidence of learner agency.

The theoretical and pedagogical rationale for learner agency and, more generally, for the implementation of more learner-centered approaches to teaching are well established. First and foremost, learner agency correlates with language learning success (see e.g., van Lier, 2008, for an overview). This is because agency not only enables language learners to take control of their learning but also gives them the power to imagine a better self, to take up and to perform new (multilingual) identities. Pavlenko and Lantolf (2000, 169-170) explain the link between agency and identity in language learning:

Ultimate attainment in second language learning relies on one's agency... While the first language and subjectivities [i.e., identity, I.V.] are an indisputable given, the new ones are arrived at by choice. Agency is crucial at the point where the individuals must not just start memorizing a dozen new words and expressions but have to decide on whether to initiate a long, painful, inexhaustive, and, for some, never-ending process of self-translation.

Because language use indexes identity, looking at how agency, language, and identity intersect opens up new vistas. For example, it focuses research attention on the choices language learners make to ensure that the emergent L2 voice is compatible with the learner's existing sense of self. SLA identity researchers (e.g., Duff & Hornberger, 2008; Pavlenko & Blackledge, 2004; Pavlenko & Lantolf, 2000) argue that agency is necessary to develop an L2 self that is compatible with existing identities. Such a claim is difficult to prove, of course, but negative evidence suggests that reduced agency can hinder language learning. In a traditional foreign language classroom learners largely yield control over the language learning process (e.g., Lantolf & Genung, 2002). Once enrolled, students typically have little say in what or how they learn. Instead they become passive recipients of knowledge and skills. Recognizing the problem, educational researchers have been calling for increased learner autonomy and a more learner-centered classroom (see Norton, 2000) that maximizes opportunities for selecting content and for constructing, reorganizing, and sharing knowledge. At the same time, the social turn within SLA has given rise to a growing research interest in learner identity, social interaction and practice, socioaffective factors, and community. This confluence of trends has highlighted how learner agency can affect learner identity. Aside from a learner's lack of control over learning content and process, traditional classrooms often leave learners feeling "boxed in," with little room to convey an (L2) identity. How others perceive and/or construct a learner's identity may constrain a learner's agency and ultimately result in frustration (e.g., Norton, 2000, see also McMahill, 1997, 2001; Kobayashi, 2002). In this way identity and agency are linked to language learning success.

Whereas formal language learning in traditional classrooms is associated with a lack of learner agency, Web 2.0, the second-generation of the web, with its many opportunities for user participation and interaction promises to allow users more control than a face-to-face setting and to maximize agency in this way. In many informal language learning environments learners choose what to learn among a range of options and often have some control over the process. Moreover, such

spaces allow users a great deal of freedom in how to present themselves online. More generally, Web 2.0 has the tools for decentralizing control and distributing authority in a way that promotes learner agency. In sum, technology holds the biggest promise in facilitating a push for a more learner-centered environment, but little empirical work (but see Marques-Schäfer, 2013) has been done thus far to see how language learners are using the affordances of virtual environments in ways that show agency.

2. Background

This study looks at learner agency in a data set extracted from *Deutsch für dich* (*DfD*; ‘German for You’), a professionally moderated and tutored informal language learning environment. Specifically, I show in what ways learners of German exercise agency. Rather than looking at what learners *can* do, this chapter reports on the computer-mediated discourse analysis of what learners *actually* do.

The study breaks new ground in two ways. The vast majority of previous empirical work on computer-mediated discourse in SLA has looked at data from intraclass or interclass formal language learning. This study, by contrast, considers informal language learning online where users participate as individual learners rather than groups of learners. Another important difference compared to prior research concerns the location of participants. Whereas previous studies have drawn, for the most part, on data generated by groups of participants in two locations such as in telecollaborative set-ups, participants in this study were geographically dispersed. These social factors are likely to impact computer-mediated discourse and interaction in major ways (Herring, 2007).

2.1. Computer-mediated Discourse Analysis (CMDA)

I begin by outlining computer-mediated discourse analysis. Computer-mediated discourse analysis (CMDA) is a framework grounded in linguistic discourse analysis that analyzes computer-mediated discourse for patterns of structure and meaning. In addition, CMDA methods can be used to find evidence of sociocognitive phenomena related to networked communication, such as collaboration, engagement, identity, and power dynamics. Unlike the broader study of CMC across disciplines, the analysis of CMDA is primarily concerned with “language and language use” (Herring, 2001, p. 612). It uses discourse analytic methods to gain insights into structure, meaning, interaction management, and social phenomena. CMDA methodology is fairly open and includes “any analysis of online behavior that is grounded in empirical, textual observations” (Herring, 2004, p. 339). At the structural level, the analysis focuses on issues such as orality, formality, expressivity, or genre characteristics by looking at phenomena such as typography, orthography, morphology, syntax, discourse schemata, and formatting conventions. Pragmatics and semantics consider how users use semiotic resources including words, emoticons, and other CMC cues (e.g., capitalization, nonstandard punctuation “!!!”) to communicate in specific contexts. Interaction management centers around turns, sequences, exchanges, threads to study interactivity, tim-

ing, coherence, and repair, for example, while social phenomena such as identity, community and cultural differences are analyzed through negotiation and conflict sequences, face management, play, and code switching/code mixing. As a flexible analytical framework for the analysis of computer-mediated discourse, CMDA has been widely referenced. Specific examples include the adaption of conversation analysis to asynchronous online environments, for example, to analyze turn taking (Gibson, 2009) or the discursive construction of identity in asynchronous environments (Stommel, 2008; Stommel & Koole, 2010). Such findings suggest that transferring and adapting existing methods to analyze CMD are useful steps along the research path toward a more complete understanding of CMD. While applying old methods and approaches to new environments comes with the inherent risk of concealing unique features of CMD, the emerging research record has shown that adapting existing methods to CMD has pushed methodology further along (Androutsopoulos & Beißwenger, 2008). Aside from methodological progress, CMDA has also prompted a reconceptualization of existing concepts (e.g., see Herring, 2004, on “community”). Moreover, extending the analytic methods and concepts to CMD allows for a unified approach to investigating interpersonal communication across modalities and may even contribute more generally to our understanding of language in interaction by highlighting aspects of interpersonal communication that are less conspicuous in other modalities. For example, the salience of emoticons and other CMC cues has given new impulses to research on emotive communication (e.g., Vandergriff, 2013). In sum, CMDA has begun to fruitfully apply, transfer, and adapt existing methods of language-oriented research to CMD. These advances notwithstanding, critical reflection on methodology is still largely lacking (Androutsopoulos & Beißwenger, 2008).

2.2. Learner Agency

Next I outline learner agency, a concept that tries to capture a way of learning that has learners taking the initiative, setting goals for themselves, finding a way to make progress toward those goals, staying focused and motivated (van Lier, 2008). Whereas there is widespread agreement as regards the concept and its key role in learning, identifying agency in discourse is problematic in part because agency is a complex construct. Van Lier clarified the distinction between factors that indicate agency and those that have sometimes been associated with agency in language learning but cannot be viewed as indicators of agency. For example, he argues that being a self-starter (i.e., taking the initiative in the learning process) indicates agency. Van Lier describes formulating personal goals for language learning as self-regulation, such as when learners make plans for their learning process and then adjust their behavior. In addition, strategic learning behavior is related to exercising agency (see Gao, 2010, on strategy use). A high degree of learner agency is associated with active approaches to learning as evidenced among learners who are actively engaged in learning content, link new knowledge to old, seek to identify patterns or principles, and generally reflect on new content (Basharina, 2009). By contrast, other variables often correlate with agency but are not necessarily linked in such a way that they can be viewed as indicators of

agency. For example, it is problematic to relate language learner agency to certain types of learning outcomes (i.e., a particular kind of knowledge). Although metalinguistic knowledge may facilitate learner agency because it allows learners to access and understand grammar rules, for example, it is not necessarily linked to agency. After all, it is also possible to exercise learner agency in acquiring grammatical competency without metalinguistic knowledge. Furthermore, agency is often associated with deliberate learning as in pursuing a specific learning goal (van Lier, 2008). However, agency and deliberate learning are actually not necessarily linked. After all, learners may set out to learn one thing but end up learning something else. For example, they may go to a French news site in order to learn about a current political issue but end up developing their language competence in the process. In this case learners show agency because they take the initiative, but the language learning is incidental rather than deliberate. In other words, the dichotomy between deliberate and incidental learning may, but does not always, coincide with agency and nonagency. In fact, much of language learning outside the classroom may be incidental, particularly at higher levels of competence when learners are able to use their L2 to pursue other interests, such as talking to friends or watching a movie.

Following van Lier (2008), Diagram 1 lists some of the indicators and nonindicators of agency.

Diagram 1

Some Indicators (+) and Nonindicators (-) of Agency (van Lier, 2008)

 Learner <ul style="list-style-type: none"> • initiates learning • formulates personal goals • self-regulates the learning process 	 Learner <ul style="list-style-type: none"> • has specific type of knowledge (e.g., metalinguistic knowledge) • learns deliberately
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2.3 Expressing and Exercising Agency

Following Mercer (2011), I distinguish between expressing agency and exercising agency. Learner agency is reflected at the discourse level in two ways: learners can exercise agency in their discursive interaction or they can express a sense of agency. The difference is between doing and talking about doing. For example, learners *exercise* agency when they take the initiative to chat with a native speaker online or initiate a new topic. By contrast, learners *express* agency when they talk about language learning in a self-reflective manner (e.g., about enrolling in a L2 course), about personal goals in language learning, or about joining L2 chat rooms (Duff, 2012). We know that such self-reflection can foster a sense of agency, but what ultimately matters more is that language learners *exercise* agency. It is through the exercise of agency that learners develop their L2 voice and ultimately their L2 self.

3. Exercising Learner Agency

Using CMDA, this chapter illustrates how learners exercise agency in *Deutsch für dich* (*DfD*) forum discussions. In what follows I first describe the data sampling technique, then pose the research questions.

3.1 Data Sampling

The data come from *DfD*, a social networking platform for learners of German worldwide. On its first anniversary on September 8, 2014, the platform had over 50,000 members as indicated by user profiles, including nearly 400 native speakers of German. Individual participant data beyond user profile data were unavailable. Unlike some other language learning social networking sites (e.g., *Duolingo*), *DfD* allows users to take on multiple interactional roles simultaneously as learners and teachers of German. The site offers language learning materials, a forum function for public one-to-many communication, an email function for private one-to-one or one-to-many communication, as well as a searchable user list. There is no synchronous communication tool, such as an instant messaging or chat tool.¹ *DfD*, subtitled *Sprache, Kultur, Deutschland* ‘Language, Culture, Germany’ describes itself as a community where learners of German can interact with peers and tutors, collectively referred to as friends, mirroring other social networking sites:

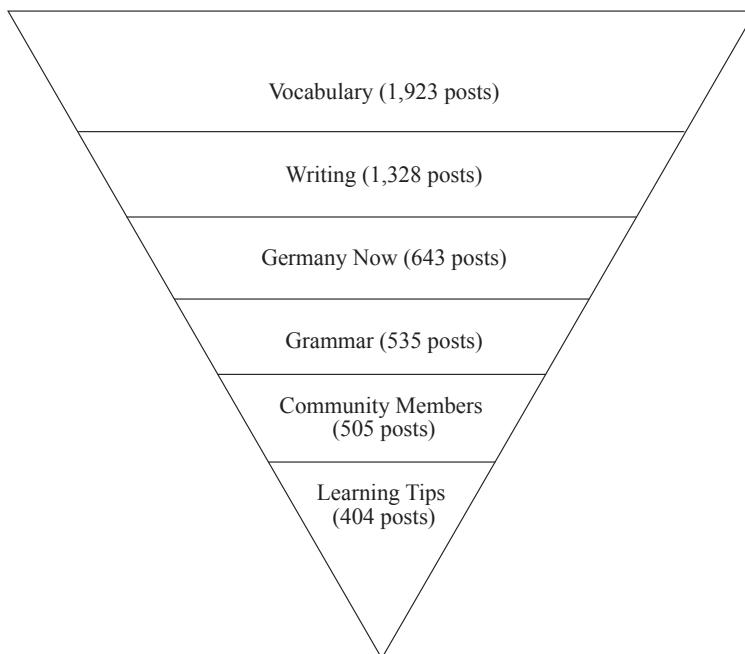
Browse tutorials by language ability level and topic, and add them to your own learning list free of charge in the community for German learners and teachers. You will find learning tips and you may share experiences with learning partners.

The data were culled from user posts in six forums *Deutschland Aktuell* ‘Germany Now,’ *Grammatik* ‘Grammar,’ *Lerntipps* ‘Learning Tips,’ *Schreiben* ‘Writing,’ *Wortschatz* ‘Vocabulary,’ and *Vorstellung der Mitglieder* ‘Community Members.’ The Community Members forum is a place for learners to express interactional goals for *DfD* participation (e.g., to practice oral German or find a language partner). The Germany Now forum elicits comments on cultural products and practices, especially on cultural differences between Germany and the many native cultures represented by *DfD* users. The Grammar and Vocabulary forums generate metalinguistic talk about grammatical forms/structures and vocabulary, respectively. The Writing forum posts cover a mix of topics, as indicated by such titles as “Why are you learning German?” or “Jokes from your country.” The topics in the Learning Tips forum are, for the most part, about tips and strategies for learning German but also provide links to learning materials. The advantage of sampling data by forum thread is that it preserves topic coherence and context and is further organized by time (for a discussion of data selection, see Herring, 2004). The total number of posts and comments in all six forums was 5,338 at the time of analysis, too large for an analysis of the relevant phenomenon. For this reason, the six forum discussion data sets were sampled by user rating. In each of the 6 forums, the 20 top-rated posts as indicated by user likes were selected, resulting

in 120 discussion threads. This sampling technique also has disadvantages. First of all, the sample ignores how many likes a post got as long as it is among the 20 top rated in each forum. Another disadvantage of this data sampling technique has to do with the forums' different sizes. The Vocabulary forum generated more than four times as many posts as the Learning Tips forum (see Diagram 2)

Diagram 2

Number of Posts Generated in Each of the six *DfD* Forums



Because my sample, which comprises the top 20-rated posts in each forum, levels out the different forum sizes, it may be inappropriate for some types of quantitative analysis. For a qualitative analysis of learner agency, however, equal samples from each forum are appropriate since they promise to capture a greater diversity of phenomena than unequal samples that draw more heavily from one forum than another. Using an interpretive approach, my analysis is mainly qualitative because it seeks to illuminate learner agency through documentation, exemplification, and argumentation (see Herring, 2004), but also—albeit it to a lesser degree—quantitative as it considers how some indicators of learner agency are distributed.

3.2 Research Questions

Using CMDA, the analysis looked at indicators of learner agency as identified in previous research (e.g., Basharina, 2009; van Lier, 2008). Specifically, the data sample was analyzed for indicators of learner agency in (a) planning, initiating, and self-regulating learning, (b) approaches to learning content, and (c) communicative interaction.

1. To what extent do posts indicate that learners plan, initiate, and self-regulate learning?
2. To what extent do learners exhibit deep or strategic approaches to learning content (Basharina, 2009)?
3. To what extent do learners exercise agency in communicative interaction?
 - 3.1 To what extent do learners take the initiative in communicative interaction (e.g., initiating a topic thread)?
 - 3.2 To what extent do they exercise agency by refusing to follow imposed rules of communicative interaction (e.g., by refusing to use German)?
 - 3.3 To what extent do learners exercise agency by taking on the role of the tutor?

3.3 Exercising Agency in Planning, Initiating, and Self-regulating Learning

For learners of German, the very act of joining *DfD* is a way of exercising learner agency. Moreover, many forum posts yield evidence of learners planning their own learning. In the Writing and Community Members forums learners seek a learning partner, planning their one-on-one learning with another user. Often, though not always, learners seek learning partners at the same level of proficiency. Many seek a partner for a specific learning activity, such as to practice writing or speaking, and some suggest the use of new “outside” tools, for example, a tool not currently available through *DfD* such as a tool for synchronous text-based chat (e.g., *WhatsApp*) or video chat (e.g., *Skype*). In the following extract, a learner is interested in video chatting.

Extract 1: Skype

Balázs Kiss [20.09.2013, 18:30]²

Hallo, ich bin Balázs aus Ungarn. Ich lerne nur selbst, speziell mit der Zeitung und TV. „Deutsch für dich“ ist beste Webseite für die Deutschlerner, aber es wäre wichtig für mich, dass ich mit der anderen Leute Sprechen kann. Ich gebe mein Skype adress, wenn jemand denkt, dass wir miteinander sprechen können, dann findet mich auf diese Skype adress: kiss.Balázs 175.

‘Hello, I’m Balázs from Hungary. I only learn by myself, especially with newspapers and TV. “Deutsch für dich” is the best website for learners of German but it is important for me to talk to other people. I’m providing my Skype address. If anyone thinks that we can talk to each other then you’ll find me at this Skype address: kiss. Balázs175.’

The choice of communication mode and of particular digital tools are an indicator that learners are attending to their individual needs (Corbett, Koedinger, & Anderson, 1997, cited in Lindgren & McDaniel, 2012). At the same time, Extract 1 can be taken as evidence of self-regulation because Balázs Kiss is not only planning but also adjusting his learning behavior. Whereas he has been focusing on the interpretive mode, his post seeks contacts for interpersonal communication. Moreover, Balázs, like other learners, uses the platform to initiate contacts, but the actual L2 discursive interaction takes place off-site, as it were, outside of *DfD*.

In many of the forums, learners help each other by answering each other's questions or suggesting resources. Recognizing gaps in one's own understanding and seeking help indicates exercising agency, specifically in self-regulating learning. When explanations do little to help answer a grammar question, learners' persistence in seeking other help is a type of self-regulation. Extract 2 comes from a learner who is not satisfied with the approximately dozen comments that have attempted to clarify the use of dative in German. The extract below follows a number of peer comments, some of which had insisted that dative is used in temporal markers that answer the question "when". Susan4 points out that this explanation is inadequate because there are instances when accusative rather than dative is used with temporal expressions.

Extract 2: When

Susan4 [17.04.2014, 15:54]

Es ist schwierig zu unterscheiden wann benutzt man ... im vorigen Jahr oder voriges Jahr. Beide antworten nach der Frage "Wann".

'It is difficult to figure out when you use...*im vorigen Jahr* [dative] or *voriges Jahr* [accusative]. Both answer the question "when."'

A day after Susan has sifted through the comments and has identified the problem with her peers' answers, she posts a comment asking for a native speaker with metalinguistic competence, a move that indicates learner agency.

Extract 3: Native Speaker

Susan4 [18.04.2014, 10:09]

Wir brauchen in diesem Forum einen Muttersprachler, der diesen Teil der Grammatik gut versteht und erklären kann. Bis jetzt gibt es mehr Fragen als Antworten.

'In this forum we need a native speaker, who understands this grammar structure well and can explain it. Until now there have been more questions than answers.'

Four days later a professional tutor-moderator provides a comprehensive explanation (shown in Extract 4).

Extract 4: Hello Everyone

Petra Schmitter [22.04.2014, 09:46]

Hallo zusammen,

Im Satz gibt es normal das Subjekt (Wer?), es kann ein direktes Objekt (Akkusativ, Wen?) und vielleicht auch ein indirektes Objekt (Dativ, Wem?) geben. Ich (= Wer?) schlafe.

Ich (= Wer?) trinke Tee (=Wen oder was?).

Ich (= Wer?) gebe meinem Bruder (=wem?) ein Buch (=wen oder was?).

Möchte man über eine Zeit sprechen, also wann etwas passiert ist, kann man Adverbien benutzen (heute, morgen, gestern) oder Kombinationen mit Nomen im Akkusativ (letztes Jahr, letzten Sommer, diesen Montag). Bei Zeitausdrücken mit Präposition steht bei "in" der Dativ ("in" ist eigentlich eine

Wechselpräposition und kann mit Akkusativ oder Dativ stehen): im letzten Sommer, in diesem Sommer. Andere Präpositionen, die nicht Wechselpräpositionen sind, haben ihren ganz normalen Kasus.

Üben könnt ihr die Zeitausdrücke in dieser Übung hier in Deutsch für dich:
https://www.goethe.de/prj/dfd/de/index.cfm?fuseaction=learning.TutorialDetail&tutorial=interaktive_grammatik_temporale_praepositionen

Viele Grüße

Petra

'Hello Everyone,

In a clause there's normally a subject (who?), and there may be a direct object (accusative, who?) and sometimes also an indirect object (dative, (to) whom?).

I (who?) sleep.

I (who?) drink tea (=who or what?).

I (who?) give my brother (whom?) a book (who or what?).

If you want to use a time expression, i.e., when something happened, you can use adverbs (today, tomorrow, yesterday) or combinations with nouns in the accusative (last year, last summer, this Monday [all marked in German by accusative endings]). With time expressions with prepositions, "in" is used in the dative ("in" is actually a two-way preposition that can take both accusative or dative): during the last summer, this summer [both marked in German by dative endings]. Other prepositions that are not two-way prepositions go with their normal case.

You can practice the time expressions in this activity here in Deutsch für dich: https://www.goethe.de/prj/dfd/de/index.cfm?fuseaction=learning.TutorialDetail&tutorial=interaktive_grammatik_temporale_praepositionen

Best,

Petra'

In this way, learners identify their individual needs, give peer support, negotiate learning content and seek professional help as needed.

The following example has a learner making changes to a learning activity that was initiated by one of the professional tutor-moderators. In her original post, the tutor-moderator asked learners to share a favorite German word, for example, particular long compounds such *Donaudampfschiffahrtsgesellschaft* 'society for steam shipping on the Danube' or other words like *Schmetterling* 'butterfly' learners may find unusual or interesting and explain why they like the word. In Extract 5, a learner suggests a change to this learning activity.

Extract 5: Meanings

Ahmed Salama [11.07.2013, 12:51]

hey leute: könntet Ihr bitte die Bedeutungen am Ende hinzufügen? ;) wenn nicht, dann sage ich euch auch nicht was mein Wort bedeutet. :)

Kukidentgeschwader

'Hey Folks: Could you please add the meanings at the end? ;) if not, then I won't tell you what my word means.:)
Polident Squadron'

Ahmed may have found it difficult or laborious to search for a translation in his L1. Moreover, an explanation in the target language may seem preferable. Having identified what would make his learning more effective, Ahmed asks that the activity be modified, and his comment indicates that he is exercising agency in self-regulating the learning process. At the same time, the way in which Ahmed phrases his request indicates agency in his L2 communicative interaction. His request, tongue-in-cheek threat (namely, if others don't explain what their words mean he will not either) is softened in a number of ways, including *bitte* 'please,' smileys, as well as marked informality with *hey leute* 'hey folks.' His conversational humor, keyed with emoticons, shows that he has is making sure that his German voice is compatible with his existing sense of self (Duff & Hornberger, 2008).

3.4 Exercising Agency in Approaches to Learning Content

A high degree of learner agency is associated with active approaches to learning as evidenced among learners who are actively engaging with learning content by taking a deep or strategic approach to content. These strategies serve as indicators of agency because, in their effort to make the most of the learning opportunity, learners made a strategic decision to expend additional time and effort to do their best work.

3.4.1 Learning grammar. I look initially at learner agency with respect to learning grammatical forms and structures. In the following thread-initial post on the dative discussion referenced above, for example, the learner's question suggests he is seeking help after trying to figure out why dative is used in this instance.

Extract 6: Why Dative?
anil22 [15.04.2014, 20:27]

Der Dativ

Bitte sehen Sie den folgenden Satz :

"Im vorigen Jahr sind meine Frau und ich mit Ihrem Reisebuero ins Gebirge gefahren. "

Koennen Sie mir sagen, warum " Im vorigen Jahr" benutzt?? hier "im vorigen Jahr" ist Dativ. meine Frage ist , warum hier der Dativ benutzt? warum nicht den Akkusativ?

'The dative

Please see the following sentence:

'Last year my wife and I went to the mountains through your travel agency.' Can you tell me why "im vorigen Jahr" uses dative? My question is, why does it use dative? Why not accusative?'

Learners regularly use the forum to get answers to their metalinguistic questions. With respect to grammar, questions often focus on the application of a particular grammar rule in context, either by providing an example of correct use as in Extract 6 or by testing the rule by constructing sentences. Unlike open-ended questions, such queries seek a specific answer or clarification.

To be sure, it is difficult for individual learners to seek answers to such questions themselves. Whereas learners can easily do a web search for “German dative” or “German passive,” they cannot do a search to find whether a sentence is correct or why it is correct. This is where the wisdom of the peer crowd and of the professional tutor-moderator can be particularly helpful to language learners.

3.4.2 Learning vocabulary. Similarly, learners ask questions about vocabulary use. In the following extract, Gabriela72 needs help with a vocabulary item.

Extract 7: Unknown Words

Gabriela72 [13.03.2014, 15:55]

unbekannte Wörter

Hallo! Ich versuche neue Wörter zu lernen, also lese ich die Zeitung - da habe ich heute ein Wort gefunden. Leider habe ich es aber nicht im Wörterbuch gefunden. Es handelt um das Wort “Personalschlüssel”. Im Satz: Eine Studie der Universität Pennsylvania hat gezeigt, das gegen Häuser mit höherem Personalschlüssel weit seltener solche Sanktionen verhängt werden. Heisst das vielleicht Personal Anzahl? Danke für irgendwelche Antworten!

‘unknown words

Hello! I’m trying to learn new words, therefore I read the paper – there I found a word today. Unfortunately, I didn’t find it in the dictionary. It’s about the word “Personalschlüssel” (caregiver ratio, literally: personal key). In the sentence: A study from the University of Pennsylvania has shown that such sanctions are rarely given to facilities with a higher caregiver ratio. Does it mean number of people? Thank you for any responses.’

This post illustrates what kind of learner questions come up in the vocabulary forum. Since vocabulary is, at least in principle, searchable, questions tend to focus on rare vocabulary items or usages that resist automatic translation.

3.4.3 Learning culture. Compared to metalinguistic talk, metacultural talk shows fewer indicators of learner agency. In Germany Now, threads are more often initiated by tutor-moderators or other native speakers than in any other forums. Only 4 out of the 20 top-rated discussions in this forum were initiated by learners, some of which will be discussed in the analysis of learner agency in communicative interaction below. Suffice it to say here that learners did not use the forum to ask questions about German culture. Instead, there were two celebratory posts of Germany’s win in the World Cup; one of which presents information, the other a personal opinion; the latter is cited in Extract 8.

Extract 8: Götze

Carlo Alioto [16.07.2014, 00:25]

fuer Mich: Götze :P

'For me: Götze :P'

Wolfgang Mosch

Für mich klar der beste Spieler der Mannschaft – Schweinsteiger!

'For me, the best player on the team is clearly – Schweinsteiger!'

Carlo quotes Wolfgang's earlier post and posts his comment in response. The direct disagreement is softened by an emoticon.

The two other learner-initiated posts were open-ended questions that provide a space for sharing personal stories and for communication, such as asking users to write about their dreams and about the words they live by. As such, they fit in well with the tutor-moderator initiated threads, the vast majority of which provide a description of cultural practices in Germany and ask learners to describe equivalent practices in their home culture. Note how the tutor-moderator challenges learners to think more deeply about cultural practice and models such reflection by explaining the reasons behind the cultural practice of eating a warm meal in the evening.

Extract 9: Dinner

Julia Fritsche [05.08.2014, 12:22]

Das Abendessen

In Deutschland ist es Tradition, abends kalt zu essen. Es gibt dunkles Brot mit Käse und Wurst - vielleicht noch Tomaten, Radieschen und saure Gürkchen. Das hängt damit zusammen, dass man Mittags in der Regel eine große, warme Mahlzeit hatte (z.B., Fleisch mit Kartoffeln, ein Auflauf oder Nudeln mit Sauce ...).

Tatsächlich essen aber inzwischen in Deutschland viele Familien mittags gar nicht mehr zusammen, weil oft beide Elternteile berufstätig sind. So ist nun bei vielen das Abendessen, die einzige gemeinsame Mahlzeit. Deshalb sind einige Familien dazu übergegangen, mittags nur eine Kleinigkeit zu essen und Abends dann gemeinsam eine warme Mahlzeit zu esse.

Ist man in deinem Land abends warm?

Was isst du abends gerne?

'Dinner

In Germany the tradition is to have a cold meal in the evening. We have dark bread with lunchmeat and cheese – and maybe radishes, tomatoes and pickles. That's because we often have a big hot lunch (for example, meat and potatoes, a casserole, or pasta with sauce...).

Nowadays, however, many families in Germany no longer eat lunch together because both parents work. For this reason, dinner has become the only meal families share. Therefore some families only eat a small lunch and a warm meal in the evening.

In your country, do people eat a warm meal in the evening?

What do you like to eat in the evening?

Alla22 [05.08.2014, 14:11]

Weil ich meistens bis 21 Uhr arbeite, esse ich abends nur etwas wenig. Meistens esse ich auch Brot mit Käse, obwohl das nicht so typisch für mein Land ist. Oft esse ich abends nur Obst, weil ich keine Hunger habe, wenn ich nach Hause komme.

'Because I often work until 9 p.m. I eat very little at night. Most of the time I eat bread with cheese even though that's not very typical for my country. Often I only eat fruit at night because I'm not hungry when I come home.'

Alla22's forum comment in Extract 9 illustrates how learners in this discussion specifically and in this forum in general often reported personal concrete cultural experiences. Such contributions tend to neither challenge co-participants nor prompt real reflection of cultural perspectives. The data analyzed in the forum Germany Now did not provide evidence of learner agency (Basharina, 2009) in approaching cultural learning as there are no indicators that learners reflected critically on German culture or their own.

3.5 Exercising Agency in Communicative Interaction

The data analyzed showed that learners exercised agency in communicative interaction with others in a number of ways by initiating discussion threads, resisting community norms (using English), and by taking on the role of tutor.

3.5.1 Learner-initiated threads. Many learners initiated a new discussion thread in one of the forums. Among the 20 top-rated forum threads, more than half were initiated by learners of German rather than native speakers/moderators. However, across the six forums the percentages of learner-initiated threads varied considerably, at 80% in Writing, 75% in Community Members, 70% in Grammar, 60% in Learning Tips, 55% in Vocabulary, 20% in Germany Now.

Diagram 3
Percentage of 20 Top-rated Discussion Threads in Each Forum Initiated by Learners and Native Speakers

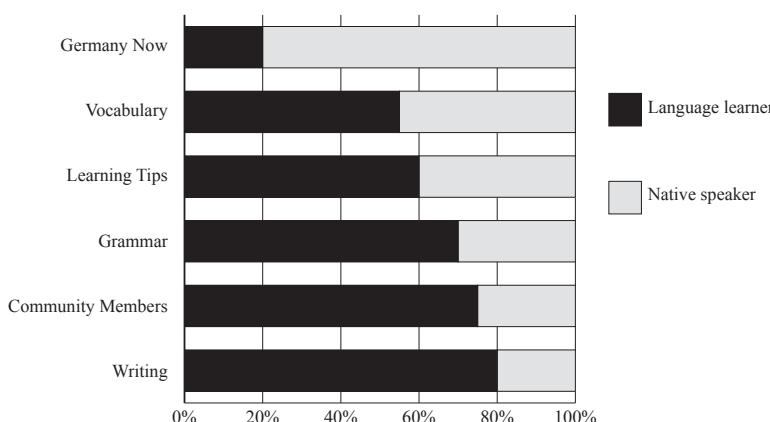


Diagram 3 shows that, among the 20 top-rated discussions threads, language learners initiated more threads in the Writing than in the Community Members forum as a percentage of all thread-initial posts. Both Writing and Community Members yielded considerably higher percentages of learner-initiated threads than Germany Now and Vocabulary. A closer look at the posts in terms of their content, however, reveals that the forums where learners initiated discussions is a poor indicator of their content. As it turns out, many posts are—strictly speaking—miscategorized. For example, a question on dictionaries appears in the vocabulary forum rather than in learning tips. Another post seeking contact with peer learners is posted in the Writing rather than in the Community Members forum.

Because forum labels are unreliable indicators of content, language learner posts were coded into one of six categories by purpose/function. These six analytical categories largely mirror the six forums. Learners seek community connections (e.g., “I am looking for a learning partner …”), talk about language including grammatical forms and structures as well as vocabulary—metalinguistic talk (e.g., “Why does the verb take last position?” or listing “funny words” such as *Stiefmütterchen* ‘pansy,’ literally “little stepmother”), engage in interpersonal and presentational communication (e.g., “What are your professions?”), plan and reflect on learning—metaprocedural talk (e.g., posted links to language learning resources), or talk about Germany—metacultural talk (e.g., discussing Germany’s win in the World Cup).

Diagram 4

Discussion Threads by Purpose/Function as a Percentage of All Learner-Initiated Posts

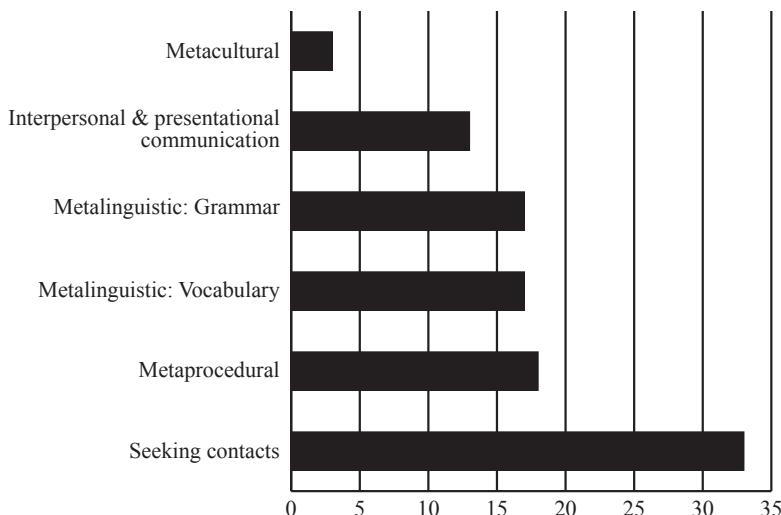


Diagram 4 shows that about a third of learner-initiated threads in the forums seek contact with peers. Some of these also suggest the use of other non-DfD tools, for example, *Skype* or *WhatsApp* for synchronous computer-mediated communication. The content analysis of forum posts shows that learners initiated more dis-

cussions on metalinguistic questions (grammar and vocabulary), as well as learning tips, materials and strategies and opposed to metacultural talk.

Indicators of learner agency in communicative interaction are also present in nonlearner-initiated threads. In a vocabulary game that asks users to brainstorm free associations, the last user's phrase is the prompt for the next participant's phrase (e.g., from 'Switzerland' to 'Wilhelm Tell' to 'fighting for freedom' to 'blood'). Extract 10 begins with Susan4 associating 'blood' with 'glory,' an association that is challenged by Josetxu in the following post.

Extract 10: Glory

Susan4 [06.08.2014, 14:30]

Der Ruhm

'Glory'

octavio [06.08.2014, 14:34]

Susan4:

Der Ruhm

'Glory'

Warum knüpfst du RUHM. mit BLUT?

'Why do you link GLORY with BLOOD?'

octavio [06.08.2014, 14:36]

Deutschlerner3:

Blut

'Blood'

Blutkörperchen :-)))(An Susan gewidmet))

'Blood cells :-)))(Dedicated to Susan)'

octavio [06.08.2014, 14:59]

Vorsicht ,denn Julia ist Psychologin und kann Schlussfolgerungen aus unseren Assoziationen Herausbringen ...

'Careful because Julia is a psychologist and can draw conclusions from our associations.'

silvia [06.08.2014, 16:10]

octavio:

Vorsicht,den Julia ist Psychologin und kann Schlussfolgerungen aus unseren Assoziationen Herausbringen ...

'Careful because Julia is a psychologist and can draw conclusions from our associations.'

Jaja. ja...Free Session würden wir brauchen!

'Yeah, yeah, yeah.. We could use free sessions!'

silvia [06.08.2014, 16:14]

folge ich mit..

Blut ... ode rBlutkörperchen

meine Wort ist

Familie

'I follow with
blood... or blood cells
my word is
family'

Susan4 [06.08.2014, 16:15]

octavio:

Susan4:

Der ruhm

'Glory'

Warum knüpfst du RUHM. mit BLUT?

'Why do you link GLORY with BLOOD?'

Weil die Helden, die ihres Blut beim Kämpfen vergießen, erreichen den Ruhm.

'Because the heroes who shed their blood in battle gain glory.'

Octavio takes issue with Susan4's word association, challenging the notion that defeating an enemy in battle leads to glory. He posts three related comments, each addressing a different interlocutor. The quotation (indented) is addressed to Susan4 and explicitly challenges her association. Two minutes later he posts another comment that quotes the "blood" contribution and, with his "blood cell," provides an alternative to Susan4's "glory" as a concept to be associated with "blood." The de facto substitution of Susan4's contribution is a face-threatening act that is mitigated by a smiley emoticon (intensified with multiple strokes). A short time later, Octavio posts another comment with a mock warning that Julia, the tutor-moderator is a psychologist by training who will be able to arrive at certain conclusions based on such associations. Quoting Octavio's comment, Silvia continues the humor by requesting free sessions with Julia and then posts the word "family." Finally, Susan4 responds by defending her association of blood and glory. What makes this discussion thread interesting is that Octavio exercised agency in the communicative interaction by stepping outside the expected role of learner engaged in a vocabulary game. When Octavio challenged Susan4's association, he initiated a new move, persisted as he posted two more comments and got uptake initially from Silvia, and finally from Susan4.

3.5.2 Resisting community norms (using English). Another way to exercise agency in communicative interaction is in the choice of language. In *DfD* German-only is relatively strictly enforced. Reminders notwithstanding, some users, especially novice-level learners still draw on their multilingual resources, as can be seen in the following extract.

Extract 11: Bad German

Polyglota [23.09.2013, 09:30]

hallo,

Ich bin Théo aus Frankreich, ich bin sehr interessiert Deutsch zu lernen und macht deutsche Freunde und Partner Sprache, bin ich sehr freundlich und würde gerne Deutsch sprechen und wissen Sie ..

Pardon my bad German, I am a beginner who is trying his best here :)

Kisses

'Hello,

I am Théo from France, I'm very interested in learning German and making German friends and language partners, I'm very friendly and would like to speak German and, you know..

Pardon my bad German, I am a beginner who is trying his best here :)

Kisses'

Apologizing for his bad German, Théo is using English in an effort to build rapport with other members. In resisting community norms, Théo's use of English can be viewed as an indicator of learner agency in communicative interaction.

3.5.3 Taking on the role of tutor. Unlike some other language learning platforms, *DfD* allows users to register simultaneously as learners and teachers of German, and some learners use the platform to take on the interactional role of teacher. In the following extract, Salen, a learner of German, invites other learners to share their professions.

Extract 12: Professions

Salen [02.07.2014, 18:42]

BERUFE-Was seid ihre Berufe?

Was seid ihre Berufe?

Wie verdient ihr das Geld?

Was wollt ihr sein, wenn ihr noch Schüler seid?

Könnt ihr davon ausführlich erzählen?

'Professions – What are your professions?

What are your professions?

How do you earn money?

What do you want to be if you're still in school?

Can you talk about it in detail?"

Salen seems to be most concerned with eliciting learner discourse, an important responsibility of a language teacher. Moreover, she is not acting as full participant by not revealing her own profession or justifying her interest. In this way, the discourse data show that she's "doing teacher." In stepping out of her learner role, she exercises agency.

4. Summary and Conclusion

Because online language learning spaces allow learners a choice of what and how to learn from a range of options, online language learning has generally been associated with greater language learner agency than the formal classroom. It is not clear, though, to what extent learners actually exercise agency in such spaces. Rather than looking at opportunities for potential use, the analysis presented here sought to show to what extent learners exercised agency in *DfD*'s forums.

First, by using *DfD* forums to read and post comments and by seeking contacts with other learners, learners exercised agency in initiating and planning language learning. One of the most interesting findings is how learners used the *DfD* tools as a place for networking and making contacts with other learners in order to communicate with them using non-*DfD* digital tools. These posts suggest that communication between learners regularly happens off-site because learners prefer to engage in interpersonal communication using synchronous tools for text-based and video chat. Although a learner's choice of digital tools indicates exercising agency, the fact that these synchronous digital tools are not available in *DfD* is a major drawback of the current version of the site. An added chat function would not only increase the use of *DfD* but also allow for tutor-moderated chat (see Marques-Schäfer, 2013).

Second, language learners exercised agency to varying degrees as they approached learning content. Indicators of agency were frequent in the context of metalinguistic talk, especially in the context of grammar forms and structures. Learners frequently initiated a new discussion with a grammar question; many of these discussions provided strong evidence of learners engaging deeply with learning content. Learners exercised a lesser degree of agency in approaching vocabulary content, and in metacultural talk, learner agency was rare.

Third, language learners exercised agency in their communicative interaction in German. Indicators of learner agency included conversational humor but also resisting community norms (German-only use). Moreover, learners' and non-learners' posts differed in their respective functions, in line with interactional complementary roles of learner and teacher. By and large, tutor-moderators sought to elicit learner discourse and provide metalinguistic information in response to questions. Learners did not initiate discussions in open-ended questions as often as tutor-moderators and native speakers. Instead they tended to ask more specific questions or share information with other learners. On the other hand, learners exercised more agency than in the traditional classroom. In metalinguistic talk, for example, learners consistently provided peer support, and tutor-moderators stepped in only if peer-based explanations had failed to provide sufficient clarity. Finally, some learners, especially advanced learners, stepped outside their learner roles to "do teacher." In sum, learner and tutor-moderator discourse data are in line with their complementary interactional roles of learner and teacher, but learners also stepped out of the traditional role. Overall, the analysis showed that learners took advantage of many of the opportunities for learner agency the forum discussions provided.

In an effort to gain a better understanding of second language use in a social networking environment, this study has applied CMDA to language learner forum discussions on a professionally hosted, moderated, and tutored platform and illustrated the utility of the analytical framework. In doing so, the analysis took a small step toward filling a critical need. At this point, we know little about L2 CMD outside of formal language learning settings. With the exception of blogs (e.g., Herring, Scheidt, Bonus, & Wright, 2005; Huffaker & Calvert, 2005), language use—both L2 and L1 use—on Web 2.0 platforms for social networking, content

sharing, or collaborative authoring has been underexplored thus far. In addition, the findings presented in this chapter showed that learner agency in communicative interaction (e.g., with respect to the role of conversational humor, interaction management, and community norms) promises to be a particularly rich area for future CMDA. By illustrating some of the ways in which learners exercised agency in the forums, the study helped formulate a research agenda that can illuminate the complex relationship between language, agency, and identity on Web 2.0 platforms.

Notes

¹ According to Alexandra Mittler of the Goethe Institute Munich (personal communication, September 25, 2014), a chat tool will be added to the *DfD* site.

² All names have been changed to protect privacy. The time stamp has the format “[day, month, year](#), 24-hour time format.” All data are cited in the original, without corrections.

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Chapter 11

Language Learner Interaction in Social Network Site Virtual Worlds

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Summary

Universities around the world are rapidly changing to the point of redefinition. Their language departments are feeling “vulnerable,” yet opportunities exist for universities to advance foreign language study since there is evidence that students wish to study languages. Online education can deliver coherent and accredited degrees but can also enhance learning outside traditional language programs. Such learning opportunities provide a viable response to the resource pressures impacting on both students and universities.

This study aims to aid understandings of the efficacy of online language education utilizing a social network site (SNS) by identifying issues of scaffolding in such sites. Whilst a large and growing body of literature dwells on issues related to online education, it has not yet fully explored what makes effective applications of online education in out-of-classroom contexts; only some recent contributions have addressed parts of this concern (e.g., Pasfield-Neofitou, 2012).

Sociocultural theory notes that social interaction is core to learning. SNS, chat, and similar sites provide opportunities for learners to engage in such social interactions. This study investigated interactions between Japanese language learners and native speakers in a virtual learning environment via SNS. Divided into groups based on ability, participants assisted each other by providing scaffolding during a series of discussion forums in Japanese. Analysis of interactions and a newly created activity system called the Online Joint Activity System (OJAS) assisted identification of contradictions that either hindered or enhanced the interactions. The groups who established a supportive community were able to conduct active discussions and to provide scaffolding to their members.

The findings of this study could assist in creating a more effective online learning environment such as that found in MOOCs, and the OJAS could assist in further understanding complex interactions in online discussion forums.

1. Introduction

This chapter reports on a study investigating the provision of scaffolding by foreign language learners of Japanese and native speakers in a social network site

(SNS), out-of-classroom environment. The term out-of-classroom environment in this study refers to the fact that the activities using an SNS were not part of face-to-face classes but were physically held outside of the classroom and were without any assessment assigned to the learners. The provision of education is no longer bound to the physical walls of a classroom (Dodd, 2013a, 2013b; Friedman, 2013). Instead, education can be delivered via electronic means that allow learners and teachers to be in separate and mobile (at least not fixed) locations. Moreover, it is equally important to mention that this change carries with it implications for delivery outcomes and costs. As a result, universities need to carefully craft online education provisions to meet their mission and available resources. This means that an in-depth understanding of what makes online provisions efficacious is highly important. Of particular importance is the need to understand how online provisions can be successful when completed as an out-of-classroom activity even if designed to complementarily support and enhance face-to-face classes.

The driving curiosity underlying this study is vested in a need to understand how the efficacy of online language education utilizing an SNS can be improved. Whilst a large and growing body of literature dwells on issues related to online education, it is notable that it has not yet well explored what makes effective applications of online education in out-of-classroom contexts, with only some recent contributions addressing parts of this concern (e.g., see Pasfield-Neofitou, 2012). Similarly, Kessler (2013) urged the need for an understanding of optimal online learning environments to promote collaborative, autonomous language learning.

A fundamental aspect of any learning is the provision of scaffolding to learners (Pasfield-Neofitou, 2012; Vygotsky, 1978; Wood, Bruner, & Ross, 1976). Scaffolding is defined as any support given to a learner to complete a task and can, for example, be provided via online learning activities. An understanding of what influences successful scaffolding in online learning activities is a central objective of this study and, in order to develop that understanding, the aid of a theoretical frame derived from sociocultural theory is invoked.

Since the early 1990s, computer mediated communication (CMC) has gathered special interest in the education sector by incorporating increasingly accessible technology to enhance learning processes. CMC in this study is defined as any communicative exchange that takes place involving two or more computing devices including email, blog, and tools that allow such communications. CMC provides flexibility in time and space, which in turn could provide an opportunity to expand the classroom beyond the physical space of a face-to-face learning environment. For foreign language learners and teachers, where learners have to master multiple syllabic writing systems, CMC usage provides a number of possibilities. For example, email allows Japanese language learners to communicate with native speakers, exposing the learners to a wide range of communication skills including intercultural communication skills (Kitade, 2006; Nakane, Thomson, & Tokumaru, 2014; Stockwell & Levy, 2001). Around the late 1990s, as online communications became valuable skills, Warschauer (2001) found a gradual

shift from seeing CMC as a tool to promote language learning to using CMC to master online communication techniques.

Warschauer (1997, p. 472) discussed “the power of CMC to encourage collaborative learning in the language classroom” in which he recognized five distinguishing features in CMC: “text-based and computer-mediated interaction; many-to-many communication; time- and place-independence; long distance exchanges; and, hypermedia links.”

These five features, with emphasis placed on the second feature (many-to-many communication), brought attention to online discussion forums as a collaborative learning activity. In recent years, online discussion forums have been noted to “offer limitless opportunities for communication across linguistic, geographical and cultural borders” (Hanna & de Nooy, 2009, p. 1). Indeed a number of studies conducted in relation to online discussion forums (e.g., Arnold & Ducate, 2006; Fitze, 2006; Lee, 2009; Tiene, 2000; Vonderwell, 2003; Warschauer, 1996) have examined the benefit of online discussion forums compared with face-to-face discussion. Furthermore, with the advancement of CMC tools, a number of tools (e.g., web-based learning systems like Blackboard, SNS, chat, and blog) are available for online discussion. Studies such as those by Knutzen and Kennedy (2012) and Carney (2008) incorporated multiple CMC tools in collaborative activities to enhance the learning process. They reported positive experiences with implementation of these CMC tools. However, deeper analysis of interactions investigating the mechanisms of collaborations is yet to be conducted.

Previous studies have focused on how researchers and/or teachers incorporate CMC in a class activity. These studies have then examined the learners’ use of language. However, we still have little understanding of language learners’ metacognitive development or the learning process as learners participate in online discussion forums in three areas in particular: online discussion forums conducted in out-of-class environments, the impact of an absence of assessment regime in online interactions (where applicable), and the ways in which diversity in language proficiency levels within student cohorts can influence online interactions.

Vygotsky’s notion of sociocultural theory has been recognized as providing a productive framework to explain online interactions and to analyze the quality of online discussion from social and cognitive perspectives (Conole, Galley, & Culver, 2011; Hadjistassou, 2012). This is because sociocultural theory allows us to examine interaction within a broad social and cultural context (Warschauer, 1997). Sociocultural theory incorporates the importance of input and output in social contexts. Furthermore, Activity Theory (Engeström, 2001; Leont’ev, 1978; Vygotsky, 1978), from sociocultural perspectives, assists in microgenetic analysis to conceptualize activities.

Activity Theory addresses the issue of individual development, activity, and the social context for the purpose of understanding human, purposeful activity based on motives. In this theory, Vygotsky created the idea of mediation, presented visually in his triangular model designed to represent “a complex and mediated act” (Vygotsky, 1978, p. 40). Researchers (Engeström, 2001; Haneda, 2007; Leont’ev, 1978; Wells, 2002) expanded Vygotsky’s triangular model and produced various

models of the activity system. The present study also delivers a new model of activity system which is called the Online Joint Activity System (OJAS) (Christensen, 2014). In a contribution to theory, this new activity system reflects the interactions over the SNS more closely than pre-existing models by incorporating writers and readers as subjects and identifying topic as one of the constituent components. Activity Theory and the OJAS assisted in analyzing the observed interactions to understand differences across groups of participants in relation to the provision of scaffolding. The contribution of the OJAS is targeted specifically at studies of interactions in online forums.

In light of the aforementioned overview of the relevant literature, this article is structured as follows: the relevant research question is identified and the methodological aspects of the study described; following that, the theoretical frame provided by the OJAS is explained before the nature of the empirical study is described; in the penultimate section a synopsis of results relevant to the research question is presented and the article then ends with conclusions, limitations and a call for further research. Contextualizing the findings of this article, it is hoped that its understandings will assist effective online discussion forum usage which in turn could ease present-day pressures on tertiary language education provision and might be able to promote language education, working towards a 21st Century “global citizenry” (Worton, 2010).

2. Research Questions and Methodological Issues

Based on the issues described above, there is value in investigating interaction between foreign language learners of Japanese and native speakers in an SNS. In particular the study set out to focus on collaborative learning via learners and native speakers’ scaffolding in an out-of-classroom environment built around an SNS. This focus leads to the research question: What factors, including proficiency differences, influence collaborative learning and the provision and take-up of scaffolding in a language learning SNS?

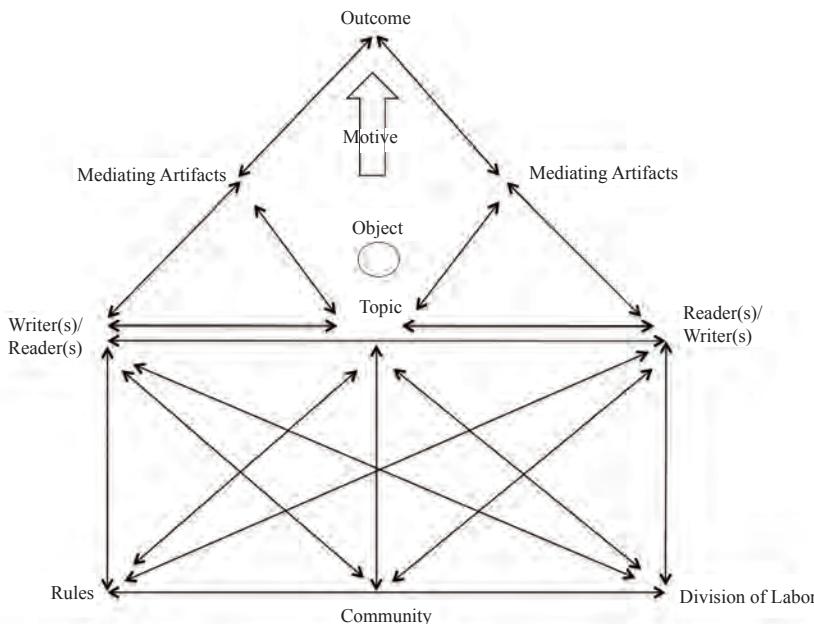
Of fundamental importance is the need to understand how learners and native speakers assist each other as they partake in discussion forums and collaborate with each other via SNS. Within this is embedded an interest in whether forming groups by level of proficiency band or by mixed proficiency level impacts on collaborative learning and the provision and take-up of scaffolding in an SNS. This aspect of the study provides a contrast to extant studies in that the latter have focused on a single level of proficiency (Kitade, 2000; Meguro & Bryant, 2010; Stockwell & Harrington, 2003).

In terms of methods to address the research question, a specific research site (named Nihongo4us) was constructed in order to make observations on the behaviors of learners and native speakers within a series of structured activities based in an SNS. Qualitative data were gathered from multiple sources: interviews, questionnaires, surveys, reflective logbook entries, language proficiency tests, and online data. As a result, an empirically rich description of learning interactions is provided at the level of individual learners as well as in terms of elements of the learning process as impacted by the key factors of: technology (specifically the

SNS platform); the learners' perceptions of CMC as a tool of learning, collaborative learning, and reflective thinking via learners' and native speakers' scaffolding; provision and take-up of scaffolding; and learner competency. To derive that rich description and subsequent analysis the abovementioned research question was examined through the eyes of sociocultural theory. In particular, in-depth analysis of interactions at the level of individual learner was undertaken from Activity Theory's point of view aided by the use of the OJAS.

The OJAS reflects online communications recognizing that all participants in such environments are both readers and writers (see Figure 1).

Figure 1
Online Joint Activity System (OJAS)



The OJAS recognizes topic as being an important factor influencing the discussion and therefore includes it as one of its constituent components. Writers compose a written text on a particular topic, using mediating artifacts that are available, such as electronic dictionaries, computers, online dictionaries, and online translation services. The written text under the topic then produces outcomes. Readers receive the text and in turn become writers. Both readers and writers follow the rules previously set in order to participate in the interactions at the Nihongo4us site. Each reader and writer has the same division of labor, and each group creates its unique community.

A contradiction is a tension within and between activity systems. However, it is not necessarily negative since it is an important "driving force of change" (Engeström, 2001, p. 133) in Activity Theory. As will be seen below, the OJAS

assisted in identifying factors that were important to answering our research question arising from the data gathered from the SNS.

3. Design of the Study

A distinctive feature of this study is that it isolated the research from institutional pressures arising from concurrent studies, such as the teaching-learning-assessment regime or face-to-face teaching-learning conduct. The site for this study was called “Nihongo4us” and was created specifically for this study within the Bebo SNS platform. The participants used specific tools within Bebo such as “Whiteboard,” “Blog,” and “Comments” to post their opinions in the structured activities.

An overview of the activities that took place for this study is shown in Figure 2. The study was divided into three phases: Presession, Nihongo4us Session, and Postsession. The online communications studied in detail were held during the Nihongo4us session.

Figure 2. Session Timetable and Activities

Presession	Orientation	Call for volunteers Orientation for all participants Questionnaire Meeting with native speakers Interview Signing consent form Japanese Proficiency Test Delivered Handbook for Nihongo4us
Nihongo4us session	Set-Up Stage	Log in to Bebo: Nihongo4us site Link with each participant in assigned group Set up own homepage Upload self-introduction Post comments on other members' self-introduction Nominate a week to be a discussion leader
	Weekly Activities	Post a discussion topic when being a leader Contribute to the discussion and make suggestions Complete weekly reflective logbook
Postsession	Feedback	Survey Interview Japanese Proficiency Test

Participants for the study were all volunteers and either current students or graduates from the University of New South Wales (UNSW), Sydney, Australia: 65 Japanese language learners and 7 native speakers. These 72 participants were divided into seven groups: two groups at an introductory level (IG#1 and IG#2) and five groups at a mixed level in Japanese proficiency (MG#1-MG#5). Each group was allocated one or two native speakers.

Seven native speakers (three males and four females) participated in this study. They were all born in Japan with both parents being Japanese nationals and six of them grew up and received undergraduate education in Japan. Four native speakers were specializing in teaching Japanese as a foreign language and teaching Japanese as a tutor at UNSW. Another two native speakers also had some tutoring experience outside of UNSW's Japanese course. One native speaker did not have any formal tutoring experience.

Based on the information obtained from the questionnaires and the pre-session interviews along with scores from the Simplified Proficiency-Oriented Test (SPOT) and university course levels, Table 1 shows that group characteristics in terms of gender, language competencies, and number of participants were evenly distributed in the two categories of groups (Introductory and Mixed). Furthermore, learners were carefully allocated to groups to achieve balance in prior social interactions between the participants since these elements were identified in previous studies as being factors influencing results (Arnold & Ducate, 2006; Lee, 2009).

Table 1
Configuration of Each Group in the Nihongo4us Session

Group	Learn- ers	Native speakers	Male	Fe- male	Mean SPOT score (/60)	Japanese Language Course				
						Not yet enrolled	1 st yr	2 nd yr	3 rd yr	4 th yr and above
IG#1	11	1	3	9	37	0	11	-	-	-
IG#2	11	2 ^a	2	11	40	1	10	-	-	-
MG#1	9	2 ^a	5	6	50	1	1	2	4	1
MG#2	9	2 ^a	4	7	53	0	1	2	4	2
MG#3	8	1	3	6	51	0	1	2	4	1
MG#4	9	1	4	6	54	0	1	2	4	2
MG#5	8	1	3	6	54	0	1	1	5	1
Total	65	7	24	51	49	2	26	9	21	7

Note. Not yet enrolled indicates the participants are not yet enrolled in the program of Japanese Studies at UNSW. However, they had sufficient prior knowledge of Japanese to participate in the present study. The Simplified Proficiency-Oriented Test (SPOT) (Kobayashi, Ford, & Yamamoto, 1996) was administered to determine each learner's Japanese proficiency level.

^aThe second native speaker was assigned to assist the principal native speaker.

4. Activities and Data Collection

Because clear instructions and a face-to-face meeting prior to online discussion had been identified as enhancing discussions (Lee, 2009), this study placed im-

portance of the provision of a face-to-face orientation prior to the online session. A face-to-face orientation was conducted prior to commencement of the Nihongo4us session. This orientation had a number of objectives: providing information on the roles of participants, the operation of Nihongo4us, netiquette, and general rules; completing a questionnaire; organizing an interview session; and providing opportunities for the participants to meet as a group.

Following the orientation, participants were asked to become involved in Nihongo4us. During the first few weeks of the session, participants set up their own home page at the Nihongo4us site. They then uploaded their self-introduction in Japanese and read the others' self-introduction, made comments, and suggested any corrections if any. Participants were also free to communicate in order to "get to know" each other and familiarize themselves with various functional tools available at the site. Furthermore, during this early stage of the session, each group organized its discussion forums, nominating a learner each week to serve a discussion leader. Discussion leaders were responsible for choosing a topic to discuss, starting a discussion thread, and facilitating the discussion forum in that week. This approach had three purposes:

1. to ensure a discussion topic was of interest to learners rather than being randomly chosen by nonparticipants,
2. to ensure every learner's involvement in the discussion forums; and
3. to distribute the role of facilitator evenly within a group.

During the session, the learners kept a weekly reflective logbook (hereafter, logbook) regarding their learning and experiences. The pro forma copy of a logbook with its 10 questions that prompted learner responses was distributed to the learners. The logbook entries were sent back to the researcher via email at the end of each week. As previous studies (Furstenberg & Levett, 2010; Lee, 2009; Mahn, 2008) found the learners' journal entries reflected their learning and provided useful insights, the logbook entry for the study was used to reflect each learner's learning behavior and thoughts on the activities during the session. The logbook entries were also later used during the postsession interviews for any clarification and further discussion to understand learners' perceptions.

During the session, native speakers took a role as a facilitator. They were to motivate their group members as a whole, as well as take care of general housekeeping chores and provide any scaffolding in regard to Japanese language and social and cultural discussion. At the completion of the session, further data were collected by means of a survey and interviews.

5. Data Analysis

Data for this study were elicited from multiple sources at various stages as the study progressed according to the description above. All discussion entries made at the site by each participant were electronically saved as well as printed for data analysis. The data collected at the presession questionnaire, the postsession survey and interviews were analyzed to understand learners' opinions about the role of a CMC tool in general in their language learning activities. None of those opinions

presented impediments to participation in Nihongo4us. The data collected during the session were identified and categorized primarily to identify and categorize every instance of scaffolding as discussed below. All the data were examined in detail in order to analyze how scaffoldings were provided and how the discussion forums in each group developed in light of Activity Theory and the OJAS.

6. Results

The findings of this study have two parts: scaffolding and development of discussion. They are interrelated and cannot be discussed in isolation. Scaffolding in this study is defined broadly as any assistance given to a participant during the Nihongo4us session. Scaffolding identified in this study was categorized largely in three areas: linguistic, content, and navigation (see Table 2).

Table 2
Categories of Scaffolding

Category of scaffolding	Scaffolding strategies	Description	Example
Linguistic scaffolding	Eliciting explanations	Asking questions and seeking explanations	What does this mean? What is it in English
	Providing corrections	Providing corrections with/without explanations	I think you mean to say [as being said] correction made in Japanese
	Asking for clarifications	Asking questions to clarify something	When you said you watched, do you mean it was Anime?
	Requesting actions	Making requests to another participant e.g. grammar check	Could you please check my reply to the topic? I want to practice the plain form.
	Providing answers	Responding to a question/clarification	It means at the end of sentence.
Content scaffolding	Summarizing/developing discussions	Helping participants to understand the content	So far, John said xyz and Mary said xyz.
		Suggesting another point of view to the discussion	I agree with John but I could see another point of view such as ...
Navigation Scaffolding	Asking questions	Asking questions regarding some computer tools and housekeeping matters	How do you change the background picture?
	Making suggestions	Making suggestions regarding technical and housekeeping matters	There is no leader next week, would you like to be a discussion leader?
	Providing answers/confirming	Confirming some matters either in relation to computer tools, including housekeeping matters	Thanks for letting me know. I've changed it. Can you see it now?

In total, 610 scaffolding strategies were observed in over 1,500 posts made during the session. Just under half of these scaffolding strategies were navigation strategies (275, 45%), closely followed by linguistic scaffolding (256, 41%); content scaffolding (79) was 12% of the total. Considering the participants had no prior experience of online discussion forums using SNS such as Nihongo4us, it is understandable that navigation strategies were the most observed strategies. The participants helped each other to navigate the site and contributed to the smooth operation of discussion forums. In other words, the number of navigation strategies in a group indicated how supportive the participants were towards their group members. Mixed level groups produced more navigation scaffolding than the introductory level groups. MG#5 had a technical problem during their first discussion forum; hence the group had a high incidence of navigation scaffolding.

The second most observed scaffolding was linguistic scaffolding, which is defined as assistance given to the participants to accurately express their meaning. One of the objectives of Nihongo4us was to facilitate participants' practice of their Japanese. Therefore, the learners were willing to correct each other and receive corrections and comments on their Japanese from fellow participants. The study found that both the learners and native speakers were able to provide scaffolding in all three areas except for two groups (introductory level group 1: IG#1 and mixed level group 3: MG#3) which did not provide any content scaffolding.

The overall provision of scaffolding and the number of posts made during the session indicated a shift between the set-up stage of the session and weekly activity stage of the session in some groups (see Table 3 and Table 4). IG#1 and MG#3 had a significant drop in the number of its learners: two thirds of the members of these two groups withdrew without notice after the weekly discussions commenced. A volunteer-based study such as this could predict some drop outs. Furthermore, in these two groups a number of learners travelled overseas without easy internet access. However, close analysis on the development of discussion provided some insightful explanation of a lack of development during the discussion forums and will be discussed below.

Table 3
Summary of Interactions During the Set-Up Stage

	# Participants	# posts	Average # posts per person	# linguistic scaffolding instances	# content scaffolding instances	# navigation scaffolding instances
IG#1	12	69 (10)	5	9 (4)	0 (0)	10 (7)
IG#2	13 ^a	118 (21+3)	9	13 (6+1)	0 (0)	24 (13)
MG#1	11 ^a	52 (11)	5	4 (0)	0 (0)	11 (8)
MG#2	11 ^a	74 (20+10)	7	13 (3+3)	0 (0)	18 (9+1)
MG#3	9	83 (6)	9	0 (0)	0 (0)	6 (3)

MG#4	10	116 (35)	14	33 (13)	4 (2)	33 (15)
MG#5	9	121 (28)	15	9 (7)	0 (0)	27 (12)
Total	75	633 (114)	9	81 (37)	4 (2)	129 (68)
Total # of Scaffolding (by Native Speakers)					214 (107)	

Note. Where two native speakers were assigned to a group and if both native speakers made posts, their posts are counted separately. The principal native speaker's posts are shown first and then the partner native speaker's posts in the parentheses.

^a Three native speakers were allocated to more than one group each.

Table 4
Summary of Interactions During the Discussion Forums

	Median # participants	# discussions held	# posts	# linguistic scaffolding instances	# content scaffolding instances	# navigation scaffolding instances
IG#1	4	6	45 (14)	7 (4)	0 (0)	0 (0)
IG#2	7	8	156 (18+2)	37 (16+1)	4 (0+1)	12 (2)
MG#1	5	9	65 (26+9)	5 (2)	6 (1+1)	5 (2)
MG#2	6	8	83 (26+9)	13 (9+3)	14 (10+2)	2 (2)
MG#3	4	3	40 (23)	11 (7)	0 (0)	5 (5)
MG#4	6	8	110 (18)	21 (5)	18 (4)	8 (6)
MG#5	4	10	119 (58)	49 (38)	22 (17)	13 (7)
Total	39	52	618 (185)	143 (85)	64 (36)	45 (24)
Average	5	7	154 (26)	20 (12)	16 (5)	6 (3)

Forty-one percent of total posts (633 of 1,510 posts) were made during the set-up stage. Across seven groups, 34% to 59% of the total number of posts was made during the set-up stage. This means that interactions at the Nihongo4us site were heavily weighted towards the set-up stage.

Vonderwell (2003) had suggested that a strong bond between the participants assists in building online community. Though measuring “the strong bond” might be difficult, various pieces of evidence that constitute bonding in online inter-

actions among group members could be considered. For example, the number of posts and the number of participants, who made initial contact and received replies from fellow participants can be measured as indicating the level of connection. Similarly, depth of interaction might be measurable, following Hew and Cheung (2008), by counting the number of posts that make up a thread.

All learners, who participated in the session and continued beyond the set-up stage, had made posts to interact with fellow participants during the set-up stage. The groups that had six or more threads during the set-up stage were IG#2, MG#4, and MG#5. MG#4 and MG#5 produced the longest threads involving multiple participants offering ideas and thoughts to each other and to others joining in the conversations. The nature of the set-up stage of getting to know each other encouraged the participants to have a “general chat” on whatever they were interested in (e.g., their favorite Anime, pop singers, TV drama and Japanese studies). IG#2, MG#4, and MG#5 were able to interact with each other and establish a supportive online community.

In all groups, learners were actively participating in “getting to know each other” during the set-up stage. The native speakers in most groups joined in the conversations and made suggestions and corrections on the learners’ Japanese. However, some native speakers were somewhat distant in their communication without disclosing their opinions or feelings to the groups. For example, the native speaker in IG#1 only made corrections upon learners’ request and his posts during the set-up stage were very brief. The native speaker in MG#3 did not interact with the group or post any corrections while the learners were interacting during the set-up stage. Her first post was to assign a senior learner to the first discussion forum.

The amount of communication during the set-up stage played an important part in the series of discussion forums and accounted for 41% of total posts. The interactions during this period had some impact on the participants’ behavior for discussion forums at the next stage. The groups that had greater interactions with all participants including native speakers had more active discussion forums. For example, IG#2, MG#4 and MG#5 produced over 100 posts during the discussion stage. Similarly, the members of some groups were able to provide scaffolding, which was not limited to native speakers since learners, including the beginner level learners, were able to provide scaffolding. The differences of activeness of discussion forums lay in how well the participants, especially the native speakers, connected with the learners during the set-up stage.

The number of topics discussed ranged from three to ten across the groups. A wide range of issues was discussed, for example the way to study Japanese; opinions on Anime and Manga, Valentine’s day, true love, and climate changes affecting the four seasons; some hypothetical questions such as where would you like to live or what would you do if you are in a time machine were also discussed.

The study observed some differences in the number of posts, discussion topics, and instances of scaffolding across the seven groups. The explanations for these phenomena were sought by analyzing the data using the newly created Activity Theory model, the OJAS.

7. Discussion

The interactions at the Nihongo4us site were not constructed by a single subject's entry but by multiple members of each group. The contradictions that were revealed by the OJAS as applied to Nihongo4us assisted in understanding development of discussion forums. For example, analyzing the interactions that occurred during the set-up stage, contradictions appeared in division of labor, rules, and mediating artifacts, all of which had some influence on the process of establishing the Nihongo4us group community. These interrelated contradictions affected the motivation of the participants which then affected the outcome. In other words, the native speakers' active participation during the set-up stage motivated the learners and the learners continued to make posts. Furthermore, active participation from each member of the group, especially from the native speakers, contributed to promote a supportive online community.

Grace from IG#1 summarized how the learners' motivation was affected when the native speaker was not active in making posts or providing scaffolding:

there weren't many corrections so no one really knew whether we were doing right or not. Needed to be corrected more often. After, I thought he was checking but I was already put off. It took so long for him to reply. (Grace, postsession interview)

Many learners, at all levels, valued the native speakers' input. Therefore, a lack of action by the native speakers affected the learners' activities. Victoria, in her fourth year, commented on the native speakers:

the most valuable part of Nihongo4us would be the fact that there was a native speaker in the group, because I was able to obtain corrections and actually learn from this exercise.

Comparably, Isabelle, in her second year, also expressed the importance of the native speakers' input:

Indispensable. I think even an advanced speaker of the language would look up to a native speaker due to their experience and depth in the knowledge of the language" (survey).

It might not be reasonable to rely on native speakers' input, even though the native speakers were assigned a role of leadership and the learners saw them as leaders comparable to a teacher figure. However, because the learners saw the native speakers as leaders, when the native speaker did not produce scaffolding, especially linguistic scaffolding, their learners were disappointed and viewed the native speaker as being disinterested in the activities. For learners it was a difficult task to provide linguistic scaffolding, but it became more feasible to attempt to do so with a lot of encouragement from the native speaker and the group because it was a supportive community. It seemed the learners had to overcome an emotional barrier created by the fact that they needed to correct fellow learners in front of a native speaker.

The learners' feelings about providing linguistic scaffolding to fellow learners can be illustrated in the following learners' comments:

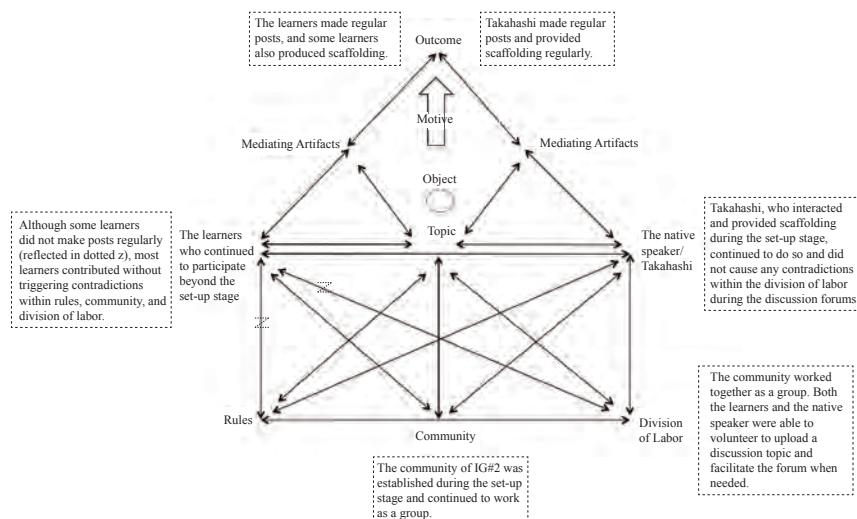
... practice and trying to correct others was particularly helpful, as it provides a different perspective and means that I have to think more carefully about what I may be commenting on. As they say, one of the best ways to remember something is to teach someone else. (Liz, week 11 logbook entry)

... unless when [sic] I am the leader of the discussion, I generally don't correct when I find mistakes. This is largely because of my personality where I would hate it if I correct someone, and yet my correction was incorrect. ... Also, I find it awkward to be correcting others, when I feel that I have no right to do so. ... my level of Japanese is higher than most ... and hence it would be somewhat alright to correct others ... however, I don't want to appear as pushy or commanding, and hence, I don't tend to correct when I see mistakes. (Victoria, survey)

The groups in which the native speakers disclosed their personal experiences, shared their opinions by joining the discussion, and provided a range of scaffolding for the learners were able to overcome various obstacles during the session and develop discussion forums. Such groups presented very supportive communities and a friendly atmosphere where the learners were able to openly discuss their feelings and were encouraged to make posts including scaffolding. Using the OJAS, Figure 3 illustrates the interactions of IG#2, a supportive group that interacted well during the set-up session and was able to continue supporting each other in the discussion forums. Furthermore, the learners in such a supportive group felt comfortable enough to provide linguistic scaffolding.

Figure 3

Overview OJAS for IG#2



Another important factor is that the study did not show the number of participants to be relevant to the degree of productivity in their discussion forums. However, in order to develop discussion forums, the discussion leaders needed to 'lead' the discussion. The discussion forum is not where each participant simply makes a single post; instead it is where they may interact and exchange opinions with each other. Skills similar to those required to conduct a face-to-face discussion are also required in the online discussion forums. Yet, not every participant was able to deploy such skills in the online forums. Therefore, it is important to provide comprehensive instruction showing how to conduct discussion forums.

The introductory level group IG#2 was able to provide scaffolding and to develop discussion forums as much as mixed level groups (MG#4 and MG#5). Nonetheless, the learners from MG#4 and #5 commented that the diversity of proficiency levels stimulated the learners in various ways. For example, the senior level learners had an 'inner battle,' thinking they had not progressed in the manner to which they were accustomed or to which they aspired. However, by providing scaffolding to their juniors, they realized how much they had learned. Likewise, the middle level learners were able to look up to their seniors and set a future target for their language level. All of these realizations stimulated the learners to continue their study of Japanese. The learners from MG#4 and MG#5 were also able to receive some advice from the senior levels, which perhaps would not be possible for the groups with just the introductory level. Compared to the introductory level groups, with only a single proficiency level, learners in the mixed level groups such as MG#4 and MG#5 were exposed to a wider range of structures and vocabulary as well as topics.

8. Conclusion

This study's focus was not on the impact of the scaffolding on the learners' language acquisition. Instead, it focused on what factors influenced the provision of scaffolding and whether an SNS, such as the Nihongo4us site, could provide a platform where participants provided each other with mutual scaffolding. When the scaffolding was provided as a process of negotiation, it promoted understanding, which in turn led to learning. Therefore it is important to understand the mechanisms of provision of scaffolding in an online discussion forum. Whilst many universities use online discussion forums and MOOCs are rapidly growing, the efficacy of online education needs to be questioned. This study supports the potential opportunities for the online discussion forums using an SNS.

The groups that were able to build supportive online communities and develop the discussion forums for the duration of Nihongo4us shared the following common factors:

1. all participants actively interacted during the set-up stage;
2. prompt and regular replies and posts as well as provisions of scaffolding were made;
3. in terms of scheduling the discussion forum by all the participants, active organization was demonstrated;

4. discussion leaders were active in leading his/her forums; and
5. group members were encouraging and supportive of each other.

The above common factors helped to build supportive online communities in the study and led the learners to provide scaffolding to each other and actively participate in discussion forums. Without these factors, contradictions appeared in the OJAS and hindered the building of supportive online communities and provision of scaffolding as well as development of discussion forums. These factors were common across the introductory groups and mixed level groups, which led us to conclude that proficiency level per se does not influence the provision of scaffolding within an SNS. However, the mixed level groups were able to provide more stimulation to fellow learners and dynamic discussion forums compared to a single introductory level group.

Every study has its limitations, and this study has a number of limitations. One limitation is that the data was gathered from volunteer participants at a single institution. These students had a high need for achievement and strong commitment and carried certain characteristics of the institution and its cohorts of students.

A second limitation is likely presence of survivor bias in the data. Less than a third of learners who had began participating in Nihongo4us completed all activities. As a result, the study was unable to incorporate data derived from the participants who had discontinued Nihongo4us.

The study was intentionally designed without any assessment tasks. However, many studies are conducted with assessment regimes and so the results of this study are unlikely to be operationalized in pedagogies where students are being assessed.

It is evident that the internet has brought significant change to our society. Learners are comfortable with online communication, and flexible online communication is suited for many of us with our very busy life styles. This study has demonstrated growing opportunities for further fruitful research. Furthermore, its findings are sufficient to justify the effort of extending this study into a multi-institutional setting.

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Chapter 12

Tweetsmarts: A Pragmatic Analysis of Well Known Native French Speaker Tweeters

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Summary

This study seeks to further the research on language learning online by examining how beginning French students used a popular microblogging tool to understand and process sociopragmatic information in their second language (L2). Considering previous work on microblogging (Antenos-Conforti, 2009; Lomicka & Lord, 2012; Lord & Lomicka, 2014), alongside studies relating to cross-cultural analyses using social media (Blattner & Fiori, 2011; Blattner & Lomicka, 2012a, 2012b), participants analyzed authentic French tweets produced by well known native speakers (NS). The analysis focused on two different features of cross-cultural pragmatics: (a) the use of abbreviations and (b) nonce and established borrowings from English. Data were analyzed by means of a questionnaire which targeted various pragmatic variables through a series of guided questions. Participants took screenshots of tweets and then analyzed them by means of the questionnaire. Results revealed a number of breakdowns occurring in situations where students were able to identify but not contextually make sense of high-frequency abbreviations and novel English borrowings. As such, we argue for the importance of making students aware of this invisible linguistic culture from an early stage of their L2 exposure because it is indispensable to the development and optimization of meaning making, interpretation, and communicative competence.

1. Introduction

Teaching languages has evolved dramatically in our globally interconnected world, not only because of technological advancement, but also because of the frequency of intercultural encounters. From this perspective, the primary task of language educators is not just to help students develop linguistic abilities, but also

to enable them to interact competently in situations with people of diverse linguistic and cultural communication styles (e.g., Byram, 2012; Modern Language Association, 2007). Despite this, Diaz (2013) notes that teaching approaches have not typically focused on intercultural capabilities but have viewed such capabilities as an implicit part of language learning. It can be argued, however, that the development of intercultural knowledge is not inherent in the acquisition of communicative competence because many aspects of culture are integrated social practices of meaning making and interpretation. To that end, a language may not simply be viewed as the core of communication, but as the processes and products of intercultural exchanges.

Understanding a language surpasses mastering grammatical elements and using a variety of vocabulary items; it literally requires engaging with the culturally positioned aspects of language in use. In order to achieve such a goal while taking into account the uniform ‘cultural’ aspects that language textbooks typically present (see, among others, Bardovi-Harlig, 2001; Hassal, 2008; Uso-Juan, 2007; Vellenga, 2004), language instructors need to become more creative in their approach: their tasks should truly combine proficiency development with engagement in form-meaning connections and interpretation from the beginning of a student’s linguistic adventure. By integrating activities that require language learners to practice understanding language in context, learners’ cultural development is stimulated, while their linguistic intercultural capabilities are enhanced. Students’ engagement in critical reflection on their own culture and identity in relation to others is essential in order to understand the reciprocity of interaction between languages and cultures. For this reason, this study is founded on a systematic integration of language and culture pedagogy from the first semester of language class.

2. Review of the Literature

2.1 Sociopragmatics and Cross-Cultural Benefits of Computer-Mediated Communication

It has been over a decade since educators recognized the fundamental need for language learning and teaching with computer-mediated communication (CMC) technologies. With the rise and popularity of social media, opportunities for interacting in global communication spaces take learners far beyond traditional educational settings (Abraham & Williams, 2009). Today’s students’ rely heavily on these social platforms, and consequently, it is not surprising that several studies have tested the incorporation of different CMC tools in the context of foreign language teaching and learning.

While many researchers have looked at particular discrete aspects of the French language in social media, such as pronouns of address, negation, and register, in this paper we will focus on some of the sociopragmatic and cross-cultural benefits of CMC. Blattner and Williams (2009) explored linguistic and social dimensions of several French language discussion forums to illustrate how foreign language learners and educators can use this type of CMC in and outside the classroom. The

focus of the study was to highlight the differences between electronic and traditional spoken and/or written L2 discourse and to prepare learners to analyze language use in forums as a means to develop their understanding of sociopragmatic features, aspects that are all too often addressed only superficially in a foreign language curriculum. This study demonstrated a clear difference between the use of pronouns of address (e.g., *tu* vs. *vous*) as well as expression of the two-particle negation (*ne ... pas*), which is often reduced to *pas* in less formal discourse. Exposing students to such variations is, thus, an essential step of their linguistic development in an L2 because it allows them to reflect on linguistic variation in the same electronic environment in their L1 (See Farrell Whitworth, 2009). Blattner and Williams claimed that this type of activity allows learners to expand similar investigations to other types of CMC.

In addition to work done in forums, Van Compernolle and Pierozak (2009) analyzed language variation in terms of spelling, pronouns, and the negative particle *ne* in French language chat environments (moderated and unmoderated) to illustrate the norm of these types of authentic discourse. They first observed the nature of both types of chat discourse (e.g., the typical duration of the interactions, the types of exchanges, and the goal of moderation, etc.). Second, they analyzed their corpus in terms of the variation of the orthographic system. The authors classified what they identified as intentional orthographic variation, such as accent suppression or vowel deletion, and then examined the frequency of these variations in moderated and non-moderated chat rooms. They concluded by providing pedagogical guidelines to implement a comparable exercise in language curricula, explaining that it is problematic for learners to memorize a simple list of orthographic variations since some of them may be polysemous. In other words, if decontextualized, the abbreviation and use of the letter *c*, for instance, could function as the subject-verb sequences *c'est*, the verb forms *sais/sait* and reflexive *s'est*. The results suggest that learners can benefit from identifying sociolinguistic variations in the context of CMC, and subsequently, be more inclined to participate and use an L2 in such an electronic environment.

In another study using synchronous online communication, Lee (2009) investigated the production of L2 learners. Lee's research examined the quality of interaction between NSs and intermediate NNSs while completing task-based activities. The data showed that chat rooms can be a powerful mediating tool for language learning; students clearly benefited from being exposed to authentic discourse. This, in turn, increased their awareness of linguistic forms and developed their intercultural communication skills, even though they did not always comprehend regionalisms used frequently by NSs.

Subsequently, other studies (Blattner & Fiori, 2009, 2011; Blattner & Lomicka, 2012a, 2012b) investigated the potential of integrating activities using the same social networking community to promote and develop communicative competence (specifically cross-cultural understanding and multiliteracy skills). In the context of an intermediate Spanish class, Blattner and Fiori (2009, 2011) asked learners to observe language use within cultural and social contexts using Facebook. The tasks completed by the learners presented the opportunity to assess

functional and cultural appropriateness of a variety of speech acts (e.g., greetings and leave-taking) in an authentic context, as well as the occurrence of abbreviations that are frequently used in electronic media. The ultimate goal of this observation task was comparable to what Van Compernolle and Pierozak (2009) proposed; by analyzing how NSs interact on Facebook, students become familiar with the discursive conventions of the electronic media and how cultural aspects of the L2 are used, which facilitates the making of meaningful connections with NSs on the same platform.

Drawing from work done by Blattner and Fiori (2009, 2011), Blattner and Lomicka (2012a, 2012b) also investigated the integration of Facebook. Their investigation not only focused on using Facebook within their intermediate French class, but also looked at the ways in which students used Facebook in other academic courses and in their private sphere. They examined pedagogical practices using a social forum and a Facebook forum and administered structured linguistic tasks and questionnaires. Students were asked to identify information in posts made by forum members: types of salutations, use of pronouns, question formation, and colloquial vocabulary (i.e., abbreviations and syllabograms). The results suggest that language analysis in Facebook forums can enhance the awareness of important sociopragmatic elements.

As illustrated by these different studies, many language educators have attempted to develop tasks that integrate technological components into the classroom, by focusing on cultural aspects of language use (e.g., Lee, 2009; Blattner & Lomicka, 2012a, 2012b) and observing and identifying norms in particular social media (e.g., Blattner & Fiori, 2009, 2011; Blattner & Williams 2009; Van Compernolle & Pierozak, 2009). These investigations illustrate how CMC technologies can positively impact foreign language learning by developing socio-pragmatic knowledge.

2.2 Twitter and Other Microblogging Research

In addition to research conducted in forums and other types of CMC, more popular social venues such as Twitter have created additional areas for research in the last few years. Although Twitter, as microblogging tool, has recently gained popularity, research exploring its potential in L2 learning has been scant at best. In fact, studies on Twitter are just beginning to emerge in the field of language learning. To date, research on the role of Twitter in language learning has focused primarily on language production (Hattem, 2014), student perceptions (Antenos-Conforti, 2009; Lomicka & Lord, 2012), and community building (Lomicka & Lord, 2012, 2014). One reason for the paucity of research may be due to the lack of tools for collecting and frameworks for analyzing data with Twitter.

One of the first documented studies involving Twitter and language learning was undertaken by Antenos-Conforti (2009), who examined tweets made by 22 students enrolled in a university-level Intermediate Italian course. Her goal was to understand students' Twitter habits in terms of content and frequency and gauge their assessment of Twitter as a language learning tool. Data were collected from tweets (frequency and distribution), a Likert questionnaire, and a follow-up free-

response questionnaire. Antenos-Conforti claimed that the incorporation of Twitter in this language course helped to create a virtual extension of the physical classroom, while also encouraging participation and fostering a strong sense of community.

Borau, Ullrich, Feng and Shen (2009) similarly investigated language learning through Twitter. Their participants included 90 ESL students enrolled in an online college course for a period of 7 weeks. A total of 5,580 tweets were analyzed for communicative and cultural competence by means of a questionnaire and an analysis of the tweets themselves. The researchers looked for the development of communicative competence, specifically sociolinguistic and strategic competence (via read tweets), as well as cultural competence (via the questionnaire). Their results indicated a positive student response to Twitter, establishing its status as a suitable tool for developing communicative and cultural competence anytime, anywhere, without the need for face-to-face interaction.

Aside from language production, Twitter has the potential to foster a sense of community within and beyond the walls of the classroom—to learn, share, reflect, and communicate. Kolowich (2011) cites the work of a professor who uses Twitter to encourage “students to talk about what’s going on in their lives in the moment, and share that with the other class” (¶ 5). While the language professor specifically comments that Twitter does not replace traditional language instruction in the classroom, she adds that it does help extend learning outside of the classroom and encourages students to use the target language more often. Following previous work (Antenos-Conforti, 2009; Dunlap & Lowenthal, 2009), Lomicka and Lord (2012) explored the use of Twitter among French learners who used the tool to communicate with each other and with native French speakers. Data were collected by way of surveys and content analyses. While survey data elicited some noteworthy attitudinal trends, content analysis (following Rourke, Anderson, Garrison, & Archer, 2001) coded tweets for social presence (1004 indicators, such as humor, emotion, agreement, and inclusive pronouns). They observed evidence of both cultural and linguistic gains and received positive feedback from students with regard to their reactions to the project. Results suggest that Twitter is capable of both building community and establishing social presence, which was demonstrated largely through affective and interactive indicators.

In the same vein, Lord and Lomicka (2014) examined the role of Twitter in a graduate seminar on language teaching methodology. Approximately 80 teachers in training around the US and Canada tweeted reactions to and reflections of their experiences as new teachers. They also completed a survey about their experiences. The content of the tweets was analyzed by discourse analysis. Both content data and survey data revealed that the microblogging tasks enabled participants to form a virtual Community of Practice in which they were able to learn, share, and reflect. Hattem (2014) employed a qualitative case study in which 10 participants and their teacher used Twitter in an intensive ESL advanced grammar course. Students practiced writing sentences with complex grammatical constructions and received some corrective feedback. Using three vignettes, Hattem demonstrated that students played with language in a variety of ways during the microblog-

ging experiences and created their own learning contexts. Similar to Borau et al. (2009), students in Hattem's study were engaged in producing language.

From looking at the current body of literature we have found that existing studies have primarily engaged students in using social networking tools, such as Facebook and Twitter, to practice target language use and build community rather than to analyze language. Few studies in language learning allow students to analyze language rather than to produce it. Second, knowledge of the discursive and interactional features in these electronic contexts can enhance conventional teaching methods because they facilitate and promote interaction in an L2 with other speakers beyond the classroom boundary. The majority of these projects have targeted intermediate and advanced foreign language learners; however, if the underlying goal of language learning is truly developing intercultural communicative competence, this process should begin at an early stage of foreign language instruction and target a variety of electronic environments. Thus, this study focuses on novice learners of French (in their first semester), in order to identify whether such a project can be appropriately used with beginners as a culturally and linguistically enriching experience that cultivates intercultural competence and prepares the new generation for our globalized world.

Based on the gaps in the existing research, our study is based on a task in which participants analyze authentic French tweets produced by well known NSs. It makes important contributions to the current body of literature in L2 learning in online settings by offering a deeper understanding of how interaction, even at the passive level of following tweets, can aid in the comprehension of cross-cultural pragmatics and the development of digital literacy skills in early L2 acquisition. We argue for the importance of making students aware of this invisible linguistic culture from the very beginning since it is indispensable to the development and optimization of communicative competence. There is a crucial need to include cultural exposure in the lower division of the foreign language curriculum and to not wait to convey such essential elements to language learners at some later stage of acquisition (Eslami-Rasekh, 2005; Maxim, 2000; Pearson, 2006).

3. Methods

3.1 Context and Procedure of the Project

Participants were recruited on a voluntary basis from a first semester French course at a southeastern university in the US. The project consisted of the following components:

1. completion of a metalinguistic survey,
2. weekly linguistic analysis of tweets (5 weeks), and
3. completion of a posttask questionnaire.

First, students completed a metalinguistic survey (see Appendix A) prior to beginning the project. This survey gave the researchers access to general background information, as well as their personal experience with and use of social media. It also queried participants about groups or people that they typically follow, time

spent with the different tools, and if they ever before had used the tools in French. Second, students were instructed to join or log into their pre-existing Twitter account and select three personalities to follow for the duration of the project. These personalities came from a list of preselected native French speakers that were divided into two categories: ‘Entertainment,’ consisting of comedians, sports figures, and musicians, of which the students chose two to follow and ‘News groups,’ of which the students chose one to follow. Each week, participants completed the questionnaire for each tweet they analyzed, which amounted to 1 or 2 tweets per week for 5 weeks for each of the 3 followed personalities (15-30 in total).¹ They documented each analyzed tweet by capturing it in a screenshot (see sample in Appendix B) and submitting it with their analyses. Students completed a linguistics questionnaire for the analysis of each tweet (see Appendix C). Once the task had been completed, students shared their reactions to it in a short post-task questionnaire (see Appendix D).

3.2. Participants

Participants were recruited from a first-semester French course taught during a 6-week summer session at a southeastern university. Eleven participants completed the task correctly, yielding analyzable results. Information on the participants’ demographics, linguistic background and experience with social media can be found in Table 1.

Table 1
Participant Demographics ($N = 11$)

Gender	Age	L1	Exposure to French (mos)	Prior experience with social media (yrs): FB and IG ^a	Prior experience with Twitter
F	20	English	6	FB (5)	3 years
M	31	English	3	FB (6)	< 1 year
F	35	English	48 (15 yrs ago)	FB (7)	5 years
F	21	English	1	FB (7), IG (3)	5 years
F	21	English	1	FB (5), IG (3)	3 years
F	22	English	4 (8 yrs ago)	FB (7)	None
F	19	English	1	FB (2)	None
M	19	Spanish	48 (2 yrs ago)	FB (5), IG (3)	2 years
M	23	English	1	FB (5)	2 years
F	21	English	1	FB (7)	None
F	18	Creole	2	FB (2), IG (1)	None

^aFB = Facebook, IG = Instagram

3.3 Data and Analysis

Each of the 148 French language tweets and its corresponding analysis was examined individually for the presence of English borrowings and French language

abbreviations. In this setting, we defined “English borrowings” as any established borrowing from English in French, as well as any novel or nonce borrowings that may have been included for some emotional effect. Questions pertaining to these parameters were then scored for correctness and examined as follows:

1. What features in this tweet qualify as English borrowings/abbreviations?
2. Did the participant correctly identify each and all of these features?
3. Did the participant over identify any of these features?
4. What was the nature of the error(s)?

Token counts and percentages for each subgroup were then tabulated alongside textual examples from the tweets.

3.4 Research Questions

The present study extends the line of research on microblogging in social media and sociopragmatics by examining the following research questions:

1. How do participants perceive and analyze English words in French language tweets written by native French speakers?
2. How do participants perceive and analyze abbreviations in French language tweets written by native French speakers?

4. Results

The sections below present the results of two components identified by the learners as they read native French speaker tweets. The two selected components that will be discussed include English words in tweets and abbreviations (questions 5-12, 16-20 in Appendix C). Space limitations do not permit discussion of the other components.

4.1 English Words in Tweets

Participants proved to be notably permissive of English borrowings in the context of French language tweets (see Table 2).

Table 2
The Status of English Words in French Language Tweets

	Token count	Examples
English borrowings identified	74	<i>selfie, go, hulk, off, instant replay, hangout</i>
English borrowings identified that evoked surprise	4	<i>wow, retard, photos, casting</i>
Misinterpreted false cognates	10	<i>baskets, places, passage, pink, encore, plus</i>
English borrowings not identified	12	<i>remixer, done, dancefloor, leader, show</i>
French sequences misinterpreted as English borrowings	1	<i>meme (même written without the circumflex)</i>

Out of a total of 148 tweets, all 11 participants identified a total of 74 English words, four of which they found surprising for various reasons: (a) because they thought the French language should have its own lexical equivalent (e.g., *wow*, *casting*), (b) because they thought the form would be rendered differently in French orthography (e.g., *fotos* instead of *photos*), or (c) because they thought the item might actually be a false cognate which they were unable to confirm with their own French abilities (e.g., *retard*). Of the 74 identified English words, ten were false cognates in French that the participants misinterpreted with the English value, causing their global comprehension of the tweet to be misdirected 100% of the time, e.g., *baskets*, *places*, *passage*, *pink*, *encore*, *plus*. Thus, an English word in a tweet was interpreted in terms of its semantic value in English every time it appeared, despite the matrix language of the tweet being French. There were no English words that were false cognates in French that participants correctly identified with their French value, although the participant misidentifying the word *retard* explicitly stated that she suspected it had some different value in French that she was unable to guess. There was also a small set of English words appearing in the tweets that participants did not identify, despite the fact they were explicitly asked to do so (e.g., *remixer*, *done*, *dancefloor*, *leader*, and *show*). There was even a native French item misinterpreted as an English borrowing, *meme*, which was represented in the tweet without its circumflex accent, causing the French learner to misidentify it as the English word ‘meme.’ In general, these results show that interpreting and understanding English borrowings proved to be a difficult task for the majority of the participants, whose limited abilities created a notable hindrance in their understanding of short Tweets in French.

4.2 Abbreviations

In the 148 tweets, there was a total of 47 abbreviations present, only 18 of which participants were able to identify, and only 10 of which they were able to parse and understand (see Table 3).

Table 3
The status of Abbreviations in French Language Tweets

	Token Count	Examples
Abbreviations identified and correctly understood	10	<i>Ière</i> , <i>Ih</i> , <i>sms</i> , <i>vs (vous)</i> , <i>Mtl</i> , <i>J.O.</i>
Abbreviations identified but not understood	8	<i>RG (Roland Garros)</i> , <i>RDV</i> , <i>2ème</i> , <i>B.O.</i>
Misinterpreted abbreviations	1	<i>M</i>
Sequences misidentified as abbreviations	1	<i>BIM!</i>
Abbreviations not identified	29	<i>la redif</i> , <i>1er</i> ; <i>J-1</i> , <i>MDR</i> , <i>t'es</i>

Of the 8 abbreviations identified but not understood, there were several acronyms (e.g., *RDV*: *rendez-vous*, *B.O.*: *Bande Originale*), some of which were context specific (e.g., *RG*: *Roland Garros*), and others of which were identical in English (e.g., *RT*: *ReTweet* and *NMA*: *National Music Awards*). Only two tokens in the

class of abbreviations that were identified but not understood contained numbers (e.g., *2ème*, *12aines*). Of the eight abbreviations that were both identified and understood, three contained numbers (e.g., *1ère*, *1h*, and *6M\$*), while the rest contained acronyms (e.g., *J.O.*: *Jeux Olympiques*, *DVD*: *Digital Versatile Disc*, and *SMS*: *Short Message Service*) and consonantal reductions of common words or proper nouns (e.g., *vs*: *vous* and *Mtl*: *Montréal*). A single abbreviation in the set was misinterpreted: a capital letter *M* was understood as an abbreviation for *Monsieur* (whose real abbreviation is *M*.) when its intended meaning was that of *M*, the musician whose stage name is short for his own first name, *Mathieu*. There was also a sequence not intended as an abbreviation that was misidentified by participants as such because of its presentation in all capital letters (e.g., *BIM!*). Unaware that the word was an onomatopoeia expressing a noisy encounter (akin to English ‘BOOM!’), the participant interpreted the capital letters as markers of an acronym she did not know, despite the presence of the exclamation point.

In addition to the 20 sequences that were flagged by participants as abbreviations (18 actual abbreviations and 2 misinterpreted sequences), there were 29 abbreviations that participants did not understand and were unable to recognize (see Table 4).

Table 4
Types of Unidentified Abbreviations in French Language Tweets

	Token Count	Examples
Numbers	5	<i>1er, 13e, 2ème</i>
Acronyms	6	<i>MDR (mort/e de rire), RG (Roland Garros), SDM (Scènes de Ménages)</i>
Phonetic spellings	11	<i>ya (il y a), t'es (tu es), selfiz (selfies)</i>
Truncations	2	<i>pronos (pronostics), redif (rédiffusion)</i>
Consonantal reductions	1	<i>vs (vous)*</i>
Mixed Expressions	4	<i>J-1, J-7, Jour-J, F1 (Formula 1)</i>

This group of 29 items can be broken down into six categories: (a) numbers, (b) acronyms, (c) phonetic spellings, (d) truncations, (e) mixed expressions, and (f) consonantal reductions. The largest of these subgroupings is phonetic spellings, which contains 11 tokens of spoken French represented authentically in writing. This category is overwhelmingly dominated by the use of *t'* for *tu* before vowel-initial verbs (e.g., *t'es*, *t'arrives*, *t'enlèves*, and *t'as*) accounting for seven out of eleven tokens. Other phonetic spellings include a reduction of the expression *il y a* to *ya*, the replacement of a single intervocalic *s* with *z*, and the use of *-z* as a plural marker on a word borrowed from English where plural morphology is commonly pronounced (e.g., *selfiz*). Abbreviations containing acronyms, numbers, or a combination of them both were also well represented in the group of unrecognized items (15 out of 29), while consonantal reductions contained only a single token,

which had also been correctly identified and understood by a different participant (*RG: Roland Garros* in acronyms).

Similar to their behavior with English borrowings, participants generally struggled to accurately interpret most of the abbreviations posted on Twitter by the various NSs. Even though many of the abbreviations they encountered can be found in a variety of media (electronic or printed), we can see that the beginning student had not yet to deal with attempting to understand these structures in the language. The analyses above highlight the fact that novice learners are seriously challenged with their ability to interpret language/words that they have never before encountered in their language textbooks, despite their popularity in authentic language and electronic social media environments such as Twitter.

4.3 Analysis of a Tweet

4.3.1. English words. Figure 1 presents an example of an analyzed tweet involving the use of two English words, one recognized and the other not.

Figure 1

Example of Tweet with English Borrowings



Shy'm
@shymofficiel

Selfie dans la cage à requins done



#m  mepaspeur 😬 😱 ☺

instagram.com/p/n_NiWuxf00/

5/14/14, 2:41 PM

97 RETWEETS 164 FAVORITES

Participant translation: ‘Selfie in a cage of _____, check (like checking off a box).’

Correct translation: ‘Selfie in shark cage: check. #notevenafraid’

In this example, the participant recognized *selfie* as an English word, listing it as such in a guided prompt on the questionnaire, however, she did not also identify the English word *done*. Instead, she assigned it the value of a different English word in her translation, “check,” which she explains in reference to checking off a box of accomplished feats.² Despite the participant’s ability to extrapolate the larger context of the daredevil tweeter bragging about her selfie in a shark tank, her global translation and answer to the guided question on hashtags reveal that she was unable to make sense of the lexical item *requins* ‘sharks’ or the hashtag #m  mepaspeur ‘#notevenafraid,’ although she did take a cue from the emoticons on what she perceived to be the “nervous and thrilled” disposition of the tweeter.

In a setting other than this task, such as for homework or a class activity, in which learners might be encouraged to look up unrecognized lexical items, it could be argued that Twitter is an ideal medium for the introduction of new vocabulary since tweets commonly include iconic features like emoticons, capital letters, and linked videos and photographs, all of which help tip off the learner to the specialized nature of the context and subsequent vocabulary, at hand.

4.3.2. Abbreviations. Figure 2 displays an analyzed tweet involving the use of two abbreviations, both of which were recognized by the participant.

Figure 2

Example of Tweet with Abbreviations



Quand vs tapez mal un sms
n'envoyez pas un 2ème pour
corriger. On comprend tout de
suite qu'il n'y a pas de mois de
"Kévrier"

5/24/14, 5:25 AM

1,442 RETWEETS 829 FAVORITES

Participant translation: ‘When you text bad you don’t need to send a 2nd one to correct it. One always understands that there is no month called ‘Kevrier’’

Correct translation: ‘When you mistype a text, don’t send a second one to correct it. People understand right away that there’s no month of ‘Kebruary.’’

In this example, the participant recognized *sms* as an abbreviation for ‘text’ and *vs* as an abbreviation for *vous* (likely because the following verb is conjugated to match: *tapez*). As such, when explicitly asked about abbreviations, she was able to make sense of them from the larger context, particularly the less-common *vs* and, thus, correctly interpret the content of the tweet. It could be argued that Twitter is an ideal medium for the introduction of abbreviations, both common and otherwise, since the 140-character limit is long enough to establish a supporting context for the abbreviated form without being too long for the use of shorthand abbreviations (e.g., pronouns) to be unfounded.

4.4 Metalinguistic Factors

In order to examine the role of metalinguistic factors on a participant’s overall accuracy in understanding a French language tweet, we tabulated individuals’ measures of previous experience with French and Twitter with their ratings of satisfaction and likeliness to continue following Francophone tweeters from the pre- and posttask surveys (see Table 5 the highest value in each column is shaded in the table).

Table 5
Metalinguistic Factors and Participant Accuracy

Participant	% correct analyzed Tweets	Prior experience with Twitter	Exposure to French (mos)	Satisfaction Rating (1-7)	Likeliness to continue following speakers (1-7)
A	31	5 years	48 (15 yrs ago)	7	7
B	31	< 1 year	3	6	4
C	22	2 years	48 (2 yrs ago)	3	4
D	10	5 years	1	5	5
E	7	None	4 (8 yrs ago)	5	4
F	8	None	1	4	2
G	6	None	2	6	1
H	8	2 years	1	5	6
I	0	None	1	4	6
J	0	3 years	6	7	2
K	0	3 years	1	6	6

Table 5 reveals that no individual factor overwhelmingly predicts how accurate a participant will be in analyzing French tweets; in every case where the highest value occurs among those with the highest percent accuracy, a low value is also attested (except Participant A). The strongest evidence comes from the length of previous exposure to French, although this finding is not absolute. More interesting is the emergence of an exceptional case, Participant A, who reported the longest previous exposure to French, the longest previous use of Twitter, the highest satisfaction rating, and the highest desire to continue following French speakers after the experiment. As such, this case suggests a participant's increased accuracy in this task is predicted not by one of these factors, but by an interaction of all four.

5. Discussion

In this section we revisit our results for English borrowings and abbreviations. Overall, the results point to the challenge that reading and interpreting L2 microbloggers represents for beginner French learners, despite the fact that the parameters under investigation are highly present in everyday exchanges in the language. Traditional printed textbooks do not present the opportunity for students to develop electronic literacy and language awareness in authentic contexts. As Williams (2009) explains, learners must be given access to and the opportunity to use new technologies in order to understand their current and potential uses for learning, online communication, and information dissemination and retrieval.

5.1. English Words in Tweets

First, for cases when an English word/borrowing was present and recognized, participants assigned it its meaning in English (even in the case of false cognates).

This caused problems for global comprehension in tweets in which the students were unable to decode enough of the rest of the message to understand the larger context. However, this finding was not surprising because the participants were in their first semester of French. It is important to consider that language learners need to experience authentic language in a variety of media (printed and electronic) from an early point in their development. This exposure to authentic language variation (e.g., borrowed English words) that is not typically presented in textbooks has a valuable impact on learners' understanding of how colorful and creative microbloggers can be. In addition, as students move forward in their L2 development and become more autonomous learners, it is essential to provide them with different types of language learning to address their literacy needs (Kern, 2000) and allow them to explore online media in a second language.

Second, participants were permissive of English words in French language tweets. This led to the assumption that more English lexical items are an established part of the French language than they actually are. This assumption could be due to the fact that participants are L1 English speakers with limited exposure to the extent and nature of English borrowings in French or to the fact that they are operating in an online community that was started in an English-speaking milieu. As stated earlier, students were surprised to find English words in French because they expected that French would have its own lexical equivalent—or some variant with a more “French-looking” spelling (e.g., *fotos* for *photos*)—or because the meaning in English is specialized enough that it lead them to believe the word must be a false cognate (e.g., *retard*). This finding reveals that beginning French students do have intuitions on the shapes and sounds of native French words, and they are sensitive to deviations from them, even if only at a beginning level.

To conclude, we can interpret from these results that in social media in general, particularly in Twitter, English words are frequently found with hyperstylized meanings, and this analysis reflects students' inability to understand these words when appearing in an L2 context. Educators can use this finding as a justification to incorporate activities in which students are pushed to develop this important linguistic ability.

5.2 Abbreviations

Participants had more difficulty making sense of abbreviations (acronyms and word truncations) in tweets than the use of English words, despite the fact that abbreviations are quite prolific in the French language. Only 18 abbreviations (out of a total of 47) were identified by participants, and only half of those (9 out of 18) were understood. The high number of uncomprehended abbreviations reveals participants' sensitivities to the shape that many abbreviations can physically take in languages (e.g., acronyms in all capital letters, ordinal numbers, and shorthand vowel deletions), even if they do not yet possess the language-specific experience or knowledge in French to understand the meanings of those shapes. Similarly, the high number of unidentified abbreviations reveals the beginners' only basic familiarity with the written and spoken French word.

It is worth mentioning that abbreviations are extremely important in today's

informal written language and unfortunately left out of most foreign language textbooks. On that note, Twitter (as well as other social media) is a noteworthy electronic venue to introduce students to abbreviations and use as a starting point to begin a contextualized discussion on their form and function. Some abbreviations are commonly used by NSs (e.g., *RG* and *F1*) and others may only be employed in an informal setting (e.g., *MDR* and *ya*). In this sense, we can then claim that exposing beginning French learners to a multitude of daily abbreviations will indirectly reinforce their acquisition of other nuanced sociopragmatic concepts, such as register. It is only by observing these abbreviations in specific electronic contexts that L2 learners will be able to better understand not only how to interpret them, but when to use them appropriately in their own production, reflecting the intercultural understanding of this linguistic aspect of the L2.

Finally, the analysis presented here may illustrate the underdeveloped ability in beginning French learners to recognize commonly used abbreviations in a variety of French language contexts. Many of these abbreviations would not only be used in other social media, but also in informal emails and oral communication. If learners are first confronted with colloquial language in a written format, the subsequent task of matching the sound with the letters becomes somewhat easier. In this way, we can better prepare them to participate in interactions with NSs in authentic contexts (see Hanna & de Nooy, 2003 for a similar perspective on discussion forums). We must remember that abbreviations are useful in their own right but always come anchored in a particular cultural context.

6. Conclusions and Limitations

This paper has shed light on Twitter as a tool for analyzing authentic French tweets produced by well known NSs. In fact, Twitter served as an interesting and appropriate venue to assist students in the comprehension of cross-cultural pragmatics and the development of digital literacy skills. As a growing and popular social networking tool, Twitter holds potential for language students in that it is not only engaging but also acts as a vehicle to increase input and produce output. Twitter can be used in myriad ways—to practice target language use and build community, and, as we have seen in this chapter to analyze language at different levels of language study. As educators, we must keep in mind, as Lord and Lomicka (2014) conclude, that “the success of endeavors such as these depends on well-designed tasks, the appropriateness of the task for the specific population using it, and the choice of the proper tools for the task” (p. 209).

Because language textbooks do not provide language instructors with adequate materials to incorporate technology and intercultural activities into their curricula, many have been left without a clear vision of ways they could use and organize teaching activities that incorporate online resources in a pedagogically sound manner to develop students' intercultural understanding. By promoting activities such as the one in this project, educators could minimize the disjunction between the rhetoric about the importance and relevance of learning a foreign language from a global perspective and the lack of activities in pedagogical circulation that serve this goal. Likewise, it is important to expose students to contemporary lan-

guage use reflective of social categories and linguistic spaces beyond that of the instructor and the classroom. Attuning them to how various types of NSs employ English borrowings and high-frequency abbreviations is paramount to this goal because many items in these groups later go on to become lexicalized and surface in multiple registers of speech. It is important to point out that there are a number of other features of tweeting discourse that could also have been used as a lens for exploring the challenges involved in reading and interpreting tweets; however, the use of English borrowings and abbreviations highlight the difference of language variation in traditional printed (text)books and electronic social media. The medium of Twitter is indispensable in this pursuit since it not only affords learners an authentic context for observing and learning the use patterns of abbreviations and English words in the French language, but does so synchronously and without limit: in real-time, in response to global current events and in the varied voices of an inexhaustible pool of expert NSs. This is something a printed textbook is unable to provide with its asynchronous format and localized, quickly out-of-date subject matter.

This study brings with it several limitations. First, it looks at one isolated task, which Diaz (2013) would note as “an isolated instance of innovation that does not offer a comprehensive, programmatic view of curriculum innovation” (p. 23). Similar activities should be tested in language classrooms in order to reshape the overall approach to language teaching curriculum from the very early stages of language learning and continue until the completion of the language major. Second, the small number of participants ($N = 11$) can also be seen as a limitation, as it is too small to yield statistically significant results at the level of the participant. As such, we chose to focus this initial inquiry at the combined number of tweets produced by the 11 students ($N = 148$) in an effort to typologize the kinds of behaviors exhibited by participants of this skill level when analyzing French tweets. A list of tendencies now established, subsequent inquiries may seek to target their occurrence among larger sample populations or examine the role of individual differences. Third, the way in which Twitter was used could be initially seen as more “passive” in that students simply read texts and did not produce language. It can be argued, however, that students *were* actively engaged even though they were simply reading—they were interacting with and interpreting the text. In fact, they were not reading without purpose; they had been given a series of directives that forced them to make use of critical thinking skills in analyzing the text before them. As Van Compernolle and Pierozak (2009) explained, it is by promoting vocabulary learning in context that students will truly develop their linguistic abilities. The exit survey, which asked students about their experiences with the project, how they perceived their learning, and if they planned to continue using Twitter in the future, is an illustration of this engagement. The majority of the participants responded positively to the project and indicated that they would continue to follow French native speakers on Twitter and look for others to follow as well. This indicates that they recognized the importance of reading and interpreting tweets in French. They also claimed that they had not used Twitter regularly before this project but were quite interested in continuing to use it in the future.

Similar conclusions were drawn by other researchers (Blattner & Fiori, 2011; Blattner & Lomicka (2012a, 2012b) who conducted comparable projects with a variety of social networking websites, which suggests that language learners at all levels enjoy activities which engage them in discovering contemporary language typically used by NSs. Future studies could investigate how students could benefit from using social media tools at a variety of levels of language instruction. For example, as Blattner and Fiori (2011) and Blattner and Lomicka (2012a, 2012b) found in their investigations, at the intermediate level we might postulate that students would more thoroughly understand Tweets.

To conclude, our findings show that our students are not certifiably “tweetsmart” when it comes to identifying English borrowings and French abbreviations, but this project gave them the opportunity to better understand a foreign language in context while stimulating their cultural development and enhancing their linguistic intercultural capabilities. For this reason, it is crucial to promote activities that incorporate social media and assist with the development of intercultural understanding between speakers of different languages. These activities should be task driven, promote critical thinking, and engage students in their learning of the language. The focus of language classes should not simply be based on learning grammar and vocabulary, but on how learning about the language and culture helps students embrace different views and world perspectives on their path to becoming global citizens.

Notes

¹ The original instructions to the participants asked for 6 tweets per week for 5 weeks; however, these requirements were reduced to 3 tweets a week as a means to keep voluntary participants interested in the project. A few participants continued analyzing more than required, but the majority of the participants selected 3 tweets from the second week onwards.

² Despite the fact that the participant provided a correct figurative translation of the English lexical item “done,” she did not identify this word as an English borrowing when asked to do so in the questionnaire. We must, therefore, understand that she either forgot to list this item as English or that she believed it to have other origins when first asked about it.

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Appendix A

Metalinguistic Survey

This is a quick survey designed to let us know about your online habits. Your answers will remain confidential. Thank you for your participation.

1. Please type your initials below.
2. What is your age?
3. What is your gender?
4. What do you consider your first language?
5. What do you consider your second language?
6. Do you speak any other languages? Please indicate them below.
7. How long have you been exposed to the French language?
8. How old were you when you first used Twitter?
9. How old were you when you first used Facebook?
10. How old were you when you first used Instagram?
11. On average, how many hours per week do you spend on Twitter?
12. On average, how many hours per week do you spend on Facebook?
13. On average, how many hours per week do you spend on Instagram?
14. What kinds of people and groups do you follow and interact with on Twitter in your FIRST LANGUAGE?
15. What kinds of people and groups do you follow and interact with on Twitter in your SECOND LANGUAGE?
16. What kinds of people and groups do you follow and interact with on Twitter in ANY OTHER LANGUAGES you speak?
17. What kinds of people and groups do you follow and interact with on Facebook in your FIRST LANGUAGE?
18. What kinds of people and groups do you follow and interact with on Facebook in your SECOND LANGUAGE?
19. What kinds of people and groups do you follow and interact with on Facebook in ANY OTHER LANGUAGE you speak?
20. What kinds of people and groups do you follow and interact with on Instagram in your FIRST LANGUAGE?
21. What kinds of people and groups do you follow and interact with on Instagram in your SECOND LANGUAGE?

22. What kinds of people and groups do you follow and interact with on Instagram in your ANY OTHER LANGUAGE you speak?
23. Have you previously used social media IN FRENCH?
24. If you use it or have used it in French, is it a PASSIVE use (i.e., reading, liking other posts) or an ACTIVE use (i.e., posting, commenting)?
25. Rate the social networks from your preferred (1) to your least preferred (3).
26. Do you use any other social networks?

Appendix B

Screenshot of a Tweet

The screenshot shows a tweet from a user named Gad Elmaleh (@gadelmaleh). The tweet content is:
Quand vs tapez mal un sms
n'envoyez pas un 2ème pour
corriger. On comprend tout de
suite qu'il n'y a pas de mois de
"Kévrier"
The tweet was posted on 5/24/14, 5:25 AM. It has 1,853 retweets and 1,058 favorites. Below the tweet are standard Twitter interaction icons: reply, retweet, favorite, and more. At the bottom, there are links to Timelines, Notifications, Messages, and Me.

Appendix C

Linguistic Questionnaire for each tweet

You will complete this questionnaire for each tweet that you analyze.

(1) Please select 2 tweets a week for each of the 3 personalities you chose to follow. Be sure to select tweets that are not just lists of people or hashtags, but that also contain a linguistic message (aim for ~7+ non-hashtag, non-@people words). DO NOT USE THE TRANSLATE BUTTON THAT TWITTER HAS RECENTLY INTEGRATED WHEN YOU ARE ANALYZING YOUR TWEETS. You should treat this like a testing situation and deal with the material without making reference to outside sources of any kind.

(2) Save a screenshot of the actual tweets (instructions here: <http://www.take-a-screenshot.org/>)

(3) Complete this ‘Linguistic Questionnaire’ for each tweet. You should complete 6 questionnaires per week, for 5 weeks.

(4) When you have finished with each tweet, paste the screenshots into a single word document that you will hand in to your teacher.

1. Please enter your initials
2. Type the name and twitter handle of the person who wrote this tweet
3. Please enter the date this tweet was posted
4. Please rate on a scale of 1 (not at all) to 7 (completely) HOW WELL YOU UNDERSTOOD THIS TWEET.
5. Are there any English words used in the tweet?
6. If YES, which one(s)?
7. Are you able to tell what the word means in this tweet?
8. If YES, what does it mean?
9. Would you use the word this way in English?
10. If NO, how is it different?
11. Are you surprised to see this English word has been borrowed into French?
12. If YES, why?
13. Are there any greetings in this tweet?
14. If YES, which one(s)?
15. In your opinion, what is the nature of this greeting?
16. Are there any abbreviations used in the tweet?
17. If YES, which one(s)?
18. Can you write the full corresponding French word and its English translation?
19. If YES, please write it here.
20. Do you use the English equivalent abbreviation?
21. Are there any hashtags in this tweet?
22. If YES, which one(s)?
23. Click on the tweet in your feed, then click on the hyperlinked hashtags(s) or look them up in the search function. Is it an established hashtag with a large following?

24. Examine each of the hashtags. Are any of them written in the same way as words in other languages?
25. If YES, look at how others have tagged them (by clicking on the hashtag and examining the list of tweets it appears in). Are all of the speakers tagging it also speaking French? Does the tag indicate the same thing as in your original tweet?
26. Why do you think the tweeter has included this hashtag / these hashtags in the tweet?
27. Can you guess the mood of the tweeter?
28. If YES, what is it?
29. What words, punctuation, capitalization, hashtags, etc. helped you identify the mood?
30. What register do you think is being used in the tweet?
31. What words, punctuation, capitalization, hashtags, etc. helped you identify the register?
32. Are any other people/groups addressed in the body of this tweet?
33. Do you know who this person/these people are?
34. If YES, specify below.
35. Now imagine you have a friend sitting nearby who doesn't read or speak French. In the space below, translate this tweet to him/her in English, paying attention not only to the language, formality, mood and content, but also to the cultural concepts mentioned therein.

Appendix D

Posttask Exit Survey

Thank you for your participation in the French Twitter project! Please rate the statements below on a scale of 1 to 7 (where 1 is “not at all” and 7 is “completely”) based on your experience in this project. This survey should take 5 minutes or less to complete. We welcome any and all of your feedback. Thank you.

1. Please indicate your initials below.
2. I liked participating in this Twitter project in French.
3. I have a better understanding of greetings in French because of my participation in this project.
4. I have a better understanding of abbreviations in French because of my participation in this project.
5. I have a better understanding of English borrowings in French because of my participation in this project.
6. I have a better understanding of hashtags in French because of my participation in this project.
7. I have a better understanding of speaker emotions in French because of my participation in this project.
8. I have a better understanding of register (= level of formality) in French because of my participation in this project.

9. I have a better understanding of cultural nuances in French because of my participation in this project.
10. I think Twitter is a worthwhile place for learners to study the French language.
11. I used Twitter regularly (in any language) before this project.
12. I will use Twitter regularly (in any language) after this project.
13. I will continue to follow the same French speakers that I followed for this project now that this project is over.
14. I will follow other French speakers on Twitter now that this project is over.
15. Please leave any additional comments you have about this experience here.

Chapter 13

Telecollaboration for Novice Language Learners—Negotiation of Meaning in Text Chats between Nonnative and Native Speakers

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Summary

With the advance of modern technology, the possibilities for language learning and teaching are steadily increasing. Language learning no longer has to take place solely in an isolated classroom setting, but can extend beyond the confines of rooms, institutions and even countries to virtual spaces where learners and native speakers (NSs) can meet to share their languages and cultures with each other. Connecting language learners online through telecollaborative projects holds diverse benefits for learners. Telecollaboration can be defined as “the use of Internet communication tools by internationally dispersed students of language in institutionalized settings in order to promote the development of (a) foreign language (FL) linguistic competence and (b) intercultural competence” (Belz, 2003, p. 68). Previous research has suggested that telecollaborative projects can have positive effects on the development of language learners’ language skills, including their pragmatic competence (Belz, 2007b; Belz & Vyatkina, 2005; Rafieyan, Sharafi-Nejad, Khavari, Eng, & Mohamed, 2014), lexical and syntactical knowledge (Belz & Müller-Hartmann, 2002; Lee & Markey, 2014; Yanguas, 2012), L2 writing skills (González-Bueno & Pérez, 2000; Llopis-García, 2012; Van Handle & Corl, 1998), and speaking skills (Abrams, 2003; Lee, 2007), and also on the development of students’ multiliteracy skills (Guth & Helm, 2012), cultural awareness (Lee & Markey, 2014; Lu, Yang, Peng, & Chou, 2004), and intercultural communicative competence (Belz, 2007a; Belz & Müller-Hartmann, 2003; Chun, 2011; O’Dowd, 2006; Schenker, 2012).

A popular tool for synchronous telecollaborative projects is chat messaging. One of the main advantages of text chat is its instantaneity which makes it mirror real-life communication (Pellettieri, 2000). Synchronous tools have been said to increase social interaction between students (Rudestam & Schoenholtz-Read, 2010) and to encourage co-construction and negotiation of meaning (O’Rourke, 2007; Tudini, 2007), thereby supporting second language acquisition. Due to the immediacy of synchronous computer-mediated communication (SCMC) it is sometimes thought to be unsuitable for beginning language learners (Olaniran, 2009) and it may present a high degree of anxiety for students (Kinginger, 1998).

In fact, much of the previous research on SCMC has focused on advanced or intermediate language learners. While studies have shown that intermediate and advanced language students engage in negotiation of meaning in SCMC (Blake, 2000; Lee, 2006; Smith, 2003a; Sotillo, 2009; Toyoda & Harrison, 2002; Tudini, 2007), there is a lack of studies investigating how beginning language learners interact and negotiate for meaning with NSs in text chats. This article aims to fill this gap by analyzing the communication patterns of beginning learners of German in synchronous one-on-one chats with NSs.

1. Negotiation of Meaning in SCMC

According to the interaction hypothesis, L2 acquisition takes place in interaction between language learners and/or NSs, particularly in the “negotiation work that triggers interactional adjustments” (Long, 1996, p. 451). Communication problems in the interaction between learners of a language, or language learners and NSs can lead to the negotiation of meaning, “a cognitive process that speakers use to better understand one another, that is, to increase the comprehensibility of language input” (Jepson, 2005, p. 79). Negotiation of meaning can support second language acquisition (Long, 1983) and can take place, for example, through clarification requests, recasts, confirmation checks, elicitations, requests for help, expansions, or repetitions (Lyster & Ranta, 1997). These types of feedback can give learners information about problems in their utterances when one interlocutor does not fully understand the other (Mackey, 2006). Feedback can encourage learners to re-phrase what they have expressed before by modifying their output. This modified output can, according to the output hypothesis, (Swain, 1993, 1995, 2005), play a role in second language acquisition processes because it can bring learners to consider their language production (Gass & Mackey, 2006). The theory suggests that learners sometimes “notice a gap in their own knowledge when they encounter a problem in trying to produce the L2” (Swain, 1995, p. 373). This may push learners to modify their output and may bring learners to produce new or improved linguistic forms thereby assisting them in second language acquisition. By communicating with others, learners may be prompted to try new strategies and structures which can “lead to enhanced performance” (Swain, 1995, p. 374). Consequently, interactional feedback (Mackey, 2006) provided in negotiated interactions between learners can be beneficial for L2 learning.

Research on negotiated interaction has in recent years been extended from face-to-face contexts (Lyster, 1998; Lyster & Ranta, 1997; Varonis & Gass, 1985) to computer-mediated contexts such as SCMC. It has been shown that intermediate and advanced L2 learners are able to negotiate meaning in chat communication with NSs or other L2 learners (Lee, 2009; Sotillo, 2009). This negotiation may be playful and involve negotiations of the relationship between the chat participants and the communication context (Warner, 2004). Several studies analyzed the type of feedback provided in synchronous text chat interaction and found that recasts and clarification checks were most commonly used (Kötter, 2003; Lee, 2002, 2006), though one study reported definition requests as the most used in-

teraction strategy (Peterson, 2008). Similar results were found for synchronous voice chats (Kitajima, 2013). Additionally, self-correction has been detected as a strategy used by many participants in SCMC (Fernández-García & Martínez Arbelaitz, 2003; Lee, 2002). It was also suggested that negotiations of meaning most often revolve around lexical items (Blake, 2000; Blake & Zyzik, 2003; Gurzynski-Weiss & Baralt, 2014; Peterson, 2008; Smith, 2004). It is unclear whether there is a difference in the amount of negotiation that takes place in synchronous voice or text chat; issues with loss of face in face-to-face chatting might prevent learners from engaging in negotiation of meaning in voice chat (Van der Zwaard & Bannink, 2014), while, on the other hand, voice chat may necessitate more meaning negotiation because of pronunciation difficulties which directly impact understanding (Jepson, 2005). A combination of voice chat and text chat may promote students' floor taking confidence (Develotte, Guichon, & Kern, 2008).

Investigations into interactional differences based on the type of communication dyad (NNSs with same or different first language or NNSs-NSs) showed that NNS dyads with a different L1 produced the most interactional feedback (Bueno-Alastuey, 2013) and that, in fact, there may be lower instances of negotiation of meaning in NNS-NNS dyads with the same L1 (Peterson, 2008). Some studies reported that students engage in negotiation of meaning in about one third of the turns in SCMC tasks (Pellettieri, 1999; Smith, 2003a, 2004), but this amount was lower in other studies (Tudini, 2003; Zhao & Angelova, 2010). Similarly to findings about text chat, in synchronous voice chats about one third of the turns included negotiation of meaning (Bueno-Alastuey, 2013; Zhao & Angelova, 2010) or even more (Yanguas, 2010).

Some studies investigated whether specific task types produced more negotiation of meaning, but it remains unclear whether decision-making tasks (Smith, 2003a, 2003b) or jig-saw tasks yield more negotiation routines (Blake, 2000; Peterson, 2008). Some studies suggested that learners modified their output more after feedback received in face-to-face or voice chat interaction than in text chat contexts (Gurzynski-Weiss & Baralt, 2014; Jepson, 2005).

With the exception of one study by Chun (1994), the majority of research on negotiation of meaning and output modification in text chat has focused on intermediate or advanced language learners. In Chun's study, 14 chat sessions were conducted in first- and second-semester German. These whole-class chats revealed that students at this level show the ability to give feedback and request clarification or confirmation from others. Apart from this study, most research to date has focused on intermediate or advanced language learners, perhaps because of the notion that "learners need to have sufficient linguistic skills to repair errors" (Lee, 2006, p. 151). The present study aims to fill this gap in current research by analyzing negotiation of meaning, utilization of feedback, and output modification of first-semester German learners in synchronous text chat with NSs. The novelty of this study lies in its investigation of telecollaboration at novice language levels.

2. Methods: Participants and Procedures

This study connected novice L2 learners of German at a small private college in

New England with NSs and advanced learners of English at a small high school in Germany. The participants in the US were two sections of first-semester German taught by different instructors, one of them the author of this chapter. Of the 28 students (15 male and 13 female) enrolled in the two sections complete data was available for 23 (13 male and 10 female). The students ranged in age from 17 to 23. None of them had any background in German with the exception of two students who had less than three semesters in middle school or high school. Their majors varied and their reasons for studying German included: fulfilling a language requirement, personal interests or career goals, and German friends or relatives. The native language of 20 students was English. Three students reported different native languages, namely Italian, Czech, and Japanese. Two students were bilingual in English/Swahili and English/Spanish, respectively. The students in the advanced high school English class (11th grade) in Germany were between 16 and 18 years of age. There were 32 students (12 female and 20 male) in the class and they all took English as a required class at their high school. They had started learning English in 5th grade.

For the synchronous exchange, tandem partnerships were established between the classes. Because of the unequal number of participants, four American students agreed to have two German partners and complete all assignments twice. The virtual exchange consisted of voice chats and text chats in alternation. The partners were selected by the students in the US based on short introductions sent from Germany, and the students established individual one-to-one exchanges. The project lasted one semester and included six text chats, and five voice chats. All chat assignments were completed outside of class and students had to arrange their chat times independently. This article analyzes only the text chat interactions between the students. Each text chat had to be a minimum of 20 minutes long. Students were informed to use English and German equally in each chat. There were also two discussion topics for each chat—one to be discussed in German and one to be discussed in English. The topics corresponded to the curricula of both classes. Students were not told to correct each other or provide feedback, but they knew that they were allowed to code-switch.

All text chat transcripts were forwarded to the researcher. Of the 23 students for whom complete data was available, 17 completed the required six text chats, while five completed only five text chats. Students used different tools for their text chats; the majority used the Skype text chat function or Facebook chat. One student used an app for the smartphone called Viber, and one student used Gmail chat. The students were graded on completing the chat assignments as part of their course homework.

3. Research Questions and Data Analysis

The research questions for this study evolved out of the lack of research on novice language learners' participation in SCMC. While many benefits of SCMC have been reported in previous studies, it is unclear if the language learning benefits through negotiation of meaning and output modification can apply to novice L2 learners as well or if, as some suggest (Lee, 2006; Olaniran, 2009), beginning

language levels are not suited for SCMC. The study investigated the following questions:

1. Do novice learners of German participate in negotiation of meaning in SCMC with NSs?
2. What negotiation moves do NNSs and NSs of German utilize to indicate and respond to non- and misunderstanding?
3. Do novice learners of German modify their output in SCMC? What type of feedback prompts them to modify their output?
4. What are individual differences in the chat dyads that might affect negotiation of meaning?

To answer the research questions, the text chat transcripts from the 20 dyads for which complete data was available were coded and analyzed by the author of the chapter. Three students were excluded from the analysis because each participant only wrote in the L2 exclusively. The English parts of the transcripts were not analyzed, unless English was used to negotiate the meaning of a German utterance. The chat transcripts were analyzed for number of total turns and number of turns as part of negotiated interaction based on Smith's (2003a) suggestion of counting as a turn a floor transfer from one participant to the other.

To identify negotiation of meaning routines in the chat transcripts, the model proposed by Varonis and Gass (1985) and Smith's (2003a) expansion were utilized. Negotiation interactions in the present study were identified according to their level of completion. Three types of negotiation routines from Varonis and Gass' (1985) original model were used as the basis for the analysis: trigger → indicator, trigger → indicator → response, and trigger → indicator → response → reaction to response. Even though this original model was based on NNS/NNS interaction it was useful to capture the patterns of communication in the NS/NNS dyads as well.

According to Varonis and Gass (1985), negotiation of meaning can ensue when nonunderstanding or misunderstanding interrupts the flow of conversation. Interlocutors "may learn to compensate by questioning particular utterances and/or requesting additional help" (Varonis & Gass, 1985, p. 73). Their model of negotiation of meaning suggests that a typical negotiation interaction consists of a trigger (T), an indicator (I), a response (R), and an optional reaction to the response (RR). The model also allows for comprehension checks (CC) to occur at any stage of the negotiation interaction after the trigger. The trigger is the utterance which causes non- or misunderstanding. The indicator is the interlocutor's signal that non- or misunderstanding has taken place. It leads to the disruption of the conversation flow, which is called 'push down' (Varonis & Gass, 1985, p. 75). The response is the reaction to the indicator, and the reaction to the response is optional and closes the negotiation routine.

In the present study, indicators were coded as implicit or explicit feedback. Explicit feedback was included because its provision also meant an interruption of the natural flow of the interaction. Explicit feedback "refers to the provision of the correct form" (Lyster & Ranta, 1997, p. 46), in this case by the NS chat partner.

Explicit feedback was coded as explicit correction when the correct form of an utterance was provided and clearly indicated that a correction was taking place, but without giving explanations about the error(s). A second type of explicit feedback was coded explanation when the correction included some sort of explanation about the error(s).

The analysis of implicit feedback indicators revealed five different types which were coded: confirmation check, clarification request, recast, request for help, explanation, and other. The following chart defines each of these indicators with examples from the transcripts.

Table 1
Implicit Feedback as Indicator

Feedback	Definition	Example ^a	Translation
Confirmation check	NS/NSS repeats parts of an utterance to confirm understanding	NNS: welche rolle spielt technologie in das tägliche den Studentin? NS: welche Rolle die moderne Technologie spielt? Du meinst facebook? Und Handy? NNS: ja	<i>NNS: which role does technology play in the daily of students?</i> <i>NS: which role modern technology plays? You mean facebook? And cell phone?</i> <i>NNS: yes</i>
Clarification request	NS/NSS articulates confusion/asks for help with something the interlocutor said	NS: Jedoch möchte ich bald meinen Tauchschein machen! NNS: Was ist Tauchschein?	<i>NS: But I want to get my diving license soon!</i> <i>NNS: What is a diving license?</i>
Recast	NS rephrases an utterance made by NNS	NNS: Ich vorführen mit zwei Bands. NNS: Ich habe Bass Guitar gespielt. NS: Du hast mit zwei bands etwas vorgeführt	<i>NNS: I performing with two bands.</i> <i>NNS: I played Bass Guitar.</i> <i>NS: You performed something with two bands</i>
Request for help	NNS asks for help with unknown word(s)	NNS: wie sagt mann “type” in Deutsch? [...] NS: viele Arten von Musik/ viele Musiktypen. Kann man beides sagen.	<i>NNS: how do you say “type” in German?</i> <i>NS: many types of music/ many music types</i>
Other	NNS uses photos to ask for unknown word	NNS: ich habe kein Haustier in Studentenheim, aber meine Schwestern haben ein... NNS: [sends link to image] NNS: Was ist das in Deutsch? NS: Das ist ein Meerschweinchen NNS: Meerscheinen, ok NNS: Meerschweinchen	<i>NNS: I don't have a pet in the dorm but my sisters have a...</i> <i>NNS: [sends link]</i> <i>NNS: What is that in German?</i> <i>NS: That is a guinea pig</i> <i>NNS: guine pig, ok</i> <i>NNS: guinea pig</i>

^aNo corrections were made to students' utterances.

The L2 learners' responses to the indicators provided by the NSs was considered uptake (Lyster & Ranta, 1997). Five types of responses were identified and coded: repair, elaboration, repetition, use of English (L1), and acknowledgement of feedback.

Table 2
NNS Responses to Feedback (Indicators)

Response to feedback	Definition	Example	Translation
Repair	NNS repairs error without correct form having been provided by NS	NNS: in diene friezet NNS: magst du? NS: was ich in meiner freizeit mage... NNS: machst* NS	<i>NNS: in your free time</i> <i>NNS: you like?</i> <i>NS: what I like in my free time...</i> <i>NNS: do*</i>
Elaboration	NNS modifies own utterance in an attempt to be understood	NNS: Welche verschieden Kultur sind in Deutschland? NS: was meinst du mit Kulturen? NNS: Welche verschiedenen Personen? Türkisch, amerikanisch, afrikanisch, englisch, griechisch...	<i>NNS: Which different culture are in Germany?</i> <i>NS: what do you mean by cultures?</i> <i>NNS: Which different people? Turkish, American, African, English, Greek...</i>
Use of L1	NNS uses English	NNS: ich möchte viele tippte Musik [...] NS: was meinste du mit tippte Musik? NNS: many types of music	<i>NNS: I like many typed music</i> <i>NS: what do you mean by typed music?</i> <i>NNS: many types</i>
Repetition	NNS repeats correct form provided by NS	NNS: Hast du ein Arbeit? NS: Eine* NNS: Danke. Hast du eine* Arbeit?	<i>NNS: do you have a job?</i> <i>NS: a* (correct ending)</i> <i>NNS: Thanks. Do you have a* (correct ending) job?</i>
Acknowledgment	NNS acknowledges feedback	NNS: aber es gibt viele Parteien NS: meinste du Partys (partein= political partys) NNS: danke	<i>NNS: but there are a lot of political parties</i> <i>NS: do you mean parties?</i> <i>NNS: thanks</i>

NSs' responses to indicators by the German learners were coded into five categories: elaboration, use of English, translation, confirmation, and no response (see Table 3).

Table 3

NS Responses to Feedback (Indicators)

Response to feedback	Definition	Example	Translation
Elaboration	NS modifies previous utterance to help NNS understand	NS: Meine Mutter ist Assistentin in einer Arztpraxis [...] NNS: Was ist eine Arztpraxis? NS: Das ist der Arbeitsplatz eines Doktors.	NS: <i>My mother is assistant in a clinician's practice</i> NNS: <i>what's a clinician's practice?</i> NS: <i>That's the work place of a doctor</i>
Use of English	NS uses English to respond or explain	NS: Aber immerhin wirst du dafür bezahlt oder? NNS: Ich begreife nicht die Frage. NS: At least you get paid for it, don't you?	NS: <i>But at least you get paid for it, don't you?</i> NNS: <i>I don't get the question.</i> NS: <i>At least you get paid for it, don't you?</i>
Translation	NS provides the German word	NNS: Wie sagt man simple und comfortable? NS: einfach und komfortabel	NNS: <i>how do you say simple and comfortable</i> NS: <i>simple and comfortable</i>
Confirmation	NS confirms accuracy of utterance made by NNS	NNS: Nein... und ich muss auf ein Konzert gehen NNS: auf? NS: Ja genau.	NNS: <i>No... and I have to go to a concert</i> NNS: <i>to?</i> NS: <i>Yes exactly.</i>
No response	NS does not respond to feedback request	NNS: Was ist eine Steuerfachangestellte? NNS: Und wo arbeiten sie? NNS: Arbeiten sie in dein Stadt? NS: *deiner NS: Ja :)	NNS: <i>What is a tax consultant?</i> NNS: <i>and where do they work?</i> NNS: <i>Do they work in your city?</i> NS: <i>*your (correct ending)</i> NS: <i>Yes :)</i>

In addition to the indicators and responses, the data was coded for self-correction moves by L2 learners without any feedback.

4. Results and Discussion

4.1 Research Question 1

The answer to the first research question was positive. The data analysis showed that the majority of novice college learners of German participated in negotiation of meaning routines when communicating with NSs in synchronous one-to-one chat sessions. All but one student's chat transcripts revealed negotiation of meaning routines. The 20 NS/NNS dyads produced a total of 2,699 turns. Of this number, 106 fit the original model of negotiation of meaning outlined by Varonis and Gass (1985) as summarized in table 4.

Table 4
Types of Negotiation Routines

Negotiation routines	Number of occurrences
T → I (NS trigger)	2
T → I (NNS trigger)	5
T → I → R	41
T → I → R → RR	58
Total	106

Analysis showed that the majority of negotiation routines (55%) included all steps of a negotiation routine. This finding confirms the results of previous research on NNS/NNS (Smith, 2003a) and NS/NNS (Fidalgo-Eick, 2001) text chat interactions. Negotiation routines including only trigger and indicator were infrequent in this study and previous studies (Smith, 2003a; Zhao & Angelova, 2010). In the majority of cases, students responded to each other's indications of non- or misunderstanding and provided a variety of responses. As suggested by Smith (2003a), the text-based environment may necessitate an acknowledgement or overt closing of the negotiation routine because of the impossibility of providing non-verbal cues. Smith's (2003a) observation of the delay between trigger and indicator was not confirmed in the data of the present study which could be a feature of SCMC between novice language learners and NSs.

In addition to the negotiation routines outlined above, two other types of routines were identified which only loosely fit the models by Varonis and Gass (1985) and Smith (2003a). The first one interrupted the conversation flow through a request for help from the NNS. The routine did not contain a trigger, but instead began with an indicator—the NNS's request for help. These routines were coded as I → R → RR, but the reaction to response did not always take place. The reactions to responses that did occur were acknowledgements of the provided help (see Table 5) or uptakes of the requested word or phrase (see Table 6).

Table 5
Negotiation Routine 1: I → R → RR

Turn	Negotiation stage
NS: er kennt Wiesbaden, oder? <i>he knows Wiesbaden, doesn't he?</i>	
NNS: Ja, bestimmt <i>Yes, certainly</i>	Indicator
NNS: Can I use that to say „Yeah, totally”	
NS: You can't really translate that phrase, but you can say “ja, natürlich”	Response
NNS: Ah ok	Reaction to response

Table 6

Negotiation Routine 2: I → R → RR

Turn	Negotiation stage
NNS: wie sagt man “actually”? <i>how do you say „actually“?</i>	Indicator
NS: actually = eigentlich	Response
NNS: eigentlich gehe ich diese Sommer in Europa, und ich möchte nach Deutschland fahren! <i>I am actually going to Europe this summer, and I also want to go to Germany!</i>	Reaction to response

The second additional type of negotiation routine that was coded included an error by the NNS as trigger, and an explicit correction as indicator/response. The reaction was coded as both indicator and response because it signaled to the NNS that there was something wrong with the utterance while at the same time providing a way to fix it.

As can be seen in Table 7, there were 73 negotiation routines that followed the request-for-help model, in eight cases of which students reused the provided item. There were 164 routines involving explicit error correction, of which 15 included an explanation of the error, and only seven included a repetition of the corrected utterance.

Table 7

Additional Types of Negotiation Routines

Additional negotiation routines	Number of occurrences
T → I / R	130
T → I/R → RR (RR consisted of acknowledgement)	27
T → I/R → RR (RR consisted of repetition)	7
I → R	30
I → R → RR (RR consisted of acknowledgement)	25
I → R → RR (RR consisted of repetition)	8
I → NR	10
Total	237

Even though the overall number of negotiation routines in this study was lower than those reported in studies involving intermediate and advanced language learners completing specific tasks (Pellettieri, 1999; Smith, 2003a, 2004), students at the novice language level demonstrated the ability to engage in negotiation of meaning in synchronous one-to-one text chat conversations with NSs. As suggested by Blake (2000), a low total number of negotiations is not a surprising result when the communication is largely defined by the goal to exchange information as was the case in this project. Bower and Kawaguchi (2011) also found low numbers of negotiation routines and emphasized the effect of task type on negotiation routines.

4.2 Research Question 2

The NSs used 237 negotiation moves in instances of potential non- or misunderstanding (see Table 8). Explicit correction was the most frequent (69%). Confirmation checks and clarification requests were used in 13% and 12% of the indicator negotiation moves while recasts were rare.

Table 8
Indicators Used by NSs

Type of indicator	Number of occurrences
Recast	15
Clarification request	28
Confirmation check	30
Explicit correction	149
Explicit correction with explanation	15
Total	237

The NNSs used 113 indicator moves of which requests for help were the most frequent (61%) and confirmation checks or other strategies were used only in a few instances (see Table 9).

Table 9
Indicators Used by NNS

Type of indicator	Number of occurrences
Other: use of photos/links	2
Confirmation check	7
Clarification request	35
Request for help	69
Total	113

Frequent use of clarification requests by NSs and NNSs alike was also pointed out in previous studies (Jepson, 2005; Kötter, 2003; Lee, 2002). The high number of requests for help does not seem surprising given the novice language level of the German learners. Studies examining NNS/NNS (Lee, 2002) and NS/NNS (Lee, 2006) interaction in SCMC also found that requests for help were employed frequently.

Responses to indicators varied (see Table 10). In line with the higher number of indicator moves by NSs, there were more negotiation responses by NNSs. These 131 response moves included repair (9), elaboration (15), use of L1 (19), repetition (22), and acknowledgment (66). The NSs made 83 response moves to indicators by NNS which included elaboration (15), confirmation of form used by NNS (18), use of English (25), and translation (25). In nine cases NSs did not respond to an indicator by a NNS, and one time a student admitted an inability to help.

Table 10

NS and NNS Responses to Indicators

NS response	Number of occurrences	NNS response	Number of occurrences
Repair	9	Translation	25
Elaboration	15	Elaboration	15
Use of L1	19	Use of English	25
Repetition	22	Confirmation	18
Acknowledgment	66	No response	9
Total	131	Total	92

The low number of repair moves in response to NS feedback may be explained by the participants' low proficiency level of German. Advanced language learners of Spanish, for example, used repair moves as most frequent response to NS feedback in a short SCMC project (Lee, 2006). Even though one previous study did not contain a single repetition (Kötter, 2003), several students in this project used repetition to respond to feedback. This indicates that students noticed and acknowledged the responses.

Use of English to respond to feedback from the chat partner was employed by NSs and NNSs in the present study as well as in previous studies on text-based communication (Darhower, 2008; Lee, 2006). While some studies revealed a high percentage of recasts (Kitajima, 2013; Lee, 2006; Tudini, 2007), this could not be confirmed in this study. The findings of the present study were in line with Kötter's (2003) results. Overall, the types of indicators and responses that occurred in the present study seem to parallel previous findings about text chat interactions.

4.3 Research Question 3

Analyzing the turns made by the NNSs of German revealed 16 examples of modified output. Even though this number seems small, it indicates that novice learners are able to modify their output when communicating in text chat with NSs. In fact, only 11 instances of output modification were identified in a study by Tudini (2003) which included advanced learners of Italian text chatting with NSs and had a higher number of turns (3,687) than the present study (2,699). The results from the present study indicate the potential for novice learners to benefit from SCMC with NSs in order to engage not only in negotiation of meaning but also in output modification, which can contribute to their second language learning (Swain, 1995).

Analyzing the episodes of modified output revealed that students were pushed to modify their output after clarification requests (44%) and confirmation checks (44%). Two episodes of pushed output occurred after encouragement from a NS to explain in more detail and after a more detailed question that demanded a more complex answer (see Table 11).

Table 11
Example of Modified Output

Turn	Negotiation stage
NNS: habt ihr zusammen gegessen usw? <i>have you eaten together etc.?</i>	Indicator
NS: gegessen? <i>eaten?</i>	Response
NS: ate?	
NNS: ja <i>yes</i>	Reaction to response (modified output)
NNS: bist du zu einem Restaurant gegangen vor oder nach das Konzert? <i>did you go to a restaurant before or after the concert?</i>	
NNS: wann ich mit meine Freunde auf einem Konzert gegangen, haben wir ein ganzen Tag zusammen <i>When I went with friends to a concert, we have the whole day together</i>	
NS: no	
NNS: wir essen ins Restaurant, wir fahren zusammen, und manchmal am Nacht wir haben ein Party <i>we eat in the restaurant, we drive together, and sometimes at night we have a party</i>	(modified output)

The relatively small number of output modifications observed in the chat transcripts could be explained by the nature of the conversation dyads. In the NS/NNS dyads, the German NS was almost always able to identify what the NNS partner wanted to express. On the one hand, this was the case because both NS and NNS could quickly switch to English to confirm understanding; on the other hand, the simplicity of the assigned discussion questions often enabled the NSs to guess the intended message of the NNS. Furthermore, the German students' English skills were advanced, so that the novice German learners often reverted to English to explain a misunderstood utterance instead of trying to explain further in German. The code switching that was used by both sides to ensure understanding was also observed in other studies involving NS/NNS text chat (Bower & Kawaguchi, 2011; Kitajima, 2013).

It is possible that NS/NNS dyads are not the ideal set-up to encourage output modification. In fact, it has been suggested that NNS/NNS communication may give students more opportunities for negotiating meaning (Varonis & Gass, 1985). A study comparing negotiations in different types of learner dyads revealed that, in voice chat communication, dyads consisting of two NNS with a different L1 produced the most modified output (Bueno-Alastuey, 2013). Interaction between

NNSs with the same L1 resulted in the lowest amount of pushed output. Similarly, Peterson (2008) reported few instances of pushed output and negotiation of meaning in a text-based CMC project between NNS with the same L1.

In addition to 16 instances of output modification, the chat transcripts in the present study also revealed 49 instances of unprompted self-corrections made by the learners. High occurrences of self-corrections were also reported in other studies (Fernández-García & Martínez Arbelaitz, 2003; Lee, 2002; Peterson, 2008). As Lee rightfully argues, it is not always clear if self-corrections in text chat take place after actual errors are made or whether the errors occur due to fast typing or lack of typing skills. Nonetheless, self-corrections may indicate that students are indeed noticing errors or gaps in their own linguistic knowledge which they are attempting to modify (Swain & Lapkin, 1998).

4.4 Research Question 4

An examination of the individual dyads revealed two factors which could have had an impact on the occurrence of negotiation of meaning episodes: number of turns, and feedback requests. The number of turns in the 20 dyads ranged from 65 to 251. On average, the dyads produced 135 turns in the German part of the chats. With the exception of two students, the students who produced more than the average number of turns engaged in a higher number of negotiation of meaning routines than those students who produced less than the average amount of turns. The dyads that produced fewer than 90 turns only negotiated for meaning between zero and three times. The students who produced more than 120 turns negotiated meaning between 7 and 17 times, with the exception of one student. This student, however, made very few errors and self-corrected most of them so that there was little need for negotiation of meaning.

This seems logical since students who produce more language have more opportunities for encountering difficulties understanding their partner or expressing themselves. Additionally, it is possible that students who produced fewer turns throughout the semester did not get to know their partner as well as students who produced more turns. Research has suggested that L2 learners who are less familiar with each other are more likely to continue the conversation rather than interrupt for non- or misunderstandings (Gass, 1997). By extension, students who are more familiar with their chat partner because they have interacted more might feel more comfortable to provide feedback or ask follow up questions on misunderstood utterances.

Additionally, it appears that dyads in which students actively asked their partner to provide feedback not only ended up receiving more corrections but also engaged in more negotiations of meaning altogether. Providing feedback to each other was not a required part of the project. Many students asked their partners in one of the first chats to correct their errors, and in some chats the NS of German asked whether they should provide corrections. It is possible that dyads where this arrangement was not made paid less attention to language forms and were less likely to confirm their understanding or ask for a clarification because they were unsure how their partner would react to feedback. In fact, Varonis and Gass

(1985) suggest that being corrected by someone else can be embarrassing, especially if the L2 learners are the same (adult) age. If dyads agreed on providing feedback, corrections may be less likely to be perceived as embarrassing.

Lastly, it also appeared that more negotiation routines emerged when dyads stuck to a strict division between the German and English part of the chat. Dyads in which either partner chose English when presented with a difficulty in expressing or understanding a thought included fewer negotiation routines.

In future projects it may be advisable to give students more guidelines about how to provide feedback and how to help their partner express themselves more successfully. Students could benefit from advice on how to push their partner to modify output through clarification requests, confirmation checks, and other types of response elicitations. This could increase the number of output modifications and students' language learning.

5. Conclusion

The present study has shown that even novice language learners are able to negotiate meaning and modify output in SCMC with NSs. While the majority of previous research investigated negotiation of meaning in SCMC between intermediate or advanced language learners, this study shows that negotiation of meaning can take place at beginning language levels even when tasks consist merely of open-ended questions. Although the total number of occurrences of modified output was only 16, the overall results are promising and indicate that even in beginning language courses, learners may benefit from SCMC.

The study has several limitations: firstly, the chat sessions took place outside of class and it is unclear how much help students had when text chatting with their partners. It is possible that they made extensive use of dictionaries and online translators. If the text chats took place in a controlled setting, the number of negotiation routines and modified output episodes might differ. Secondly, the chat assignment was relatively open. Even though students were told to spend half of the chat speaking in English and the other half in German, precise instructions were not provided. This meant that there was a lot of code switching and some dyads used a lot of English instead of trying to express meaning in German. Had the instructions been more detailed, students may have had more need to negotiate meaning. Thirdly, the number of participants and the overall turns that were included in this study were relatively low. Fourthly, the data was only rated by one rater.

In spite of these limitations, the results of this study have important implications. While asynchronous CMC is usually recommended and used for beginning language learners (Gläzman, 2004; Olaniran, 2009), this study suggests that synchronous CMC may be a valuable learning tool for novice language learners as well. In spite of the difficulties that may accompany synchronous communication, such as pressure for the students (Rösler, 2007) and potential connection issues (Rudestam & Schoenholtz-Read, 2010), the advantages outweigh the potential shortcomings. SCMC resembles real-life communication and provides students with an opportunity to practice their emerging language skills in an authentic

context (Kinginger, 1998; Pellettieri, 2000). Moreover, students can learn collaboratively and interactively, exchange a lot of information (Meskill & Anthony, 2010), and receive immediate feedback on questions (Pellettieri, 2000). Additionally, they can engage in negotiation of meaning and output modification (Tudini, 2003). Because of the many advantages of synchronous text chat, this type of CMC should be incorporated at all language levels.

Future research should investigate how successful negotiation of meaning can take place in synchronous text chat. The precise learning advantages in communication of NS/NNS and different NNS/NNS dyads should be analyzed in more detail. While a great deal of work has been done on task types and their effects on negotiation of meaning, future work should also take into consideration learner variables such as gender of the dyads, background, and age and their impact on negotiation of meaning and output modification. Research should also continue to analyze how negotiation of meaning can affect different types of learning, such as vocabulary learning (Smith, 2005). Lastly, while some work has been done on SCMC and its effects on intercultural competence (Chun, 2011; Tudini, 2007), more research is needed to assess the relationship between SCMC, language learning, and the development of intercultural competence.

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Chapter 14

Learning On-The-Go in Institutional Telecollaboration: Anthropological Perspectives on the Boundaries of Digital Spaces

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Summary

As digitally mediated communication increasingly becomes a dimension of everyday life across the globe, a greater number of individuals have access to newer ways of engaging in learning practices on-the-go. Learning here (i.e., in institutionalized educational settings with a videoconferencing program like Adobe Connect) can be explicitly conceptualized in terms of participation in distributed networks of relationships across physical, geopolitical, as well as virtual spaces.

The study presented here is interested in (a) examining the nature of languaging in situ in digital institutional learning settings like virtual classrooms, including the types of practices that unfold at the boundaries of different glocal communities and (b) throwing light upon the relationship(s) between the openness and parallel closure of online glocal spaces. We draw upon ethnographic data from a project at the Communication, Culture and Diversity (CCD; <http://www.oru.se.humes/ccd>) research group in Sweden. Our anthropologically framed study takes sociocultural and decolonial perspectives as points of departure and focuses upon approximately 40 hours of screen recordings of online sessions of an *Italian for Beginners* course offered by a Swedish university.

Sociocultural and decolonial perspectives on language, culture, and identity allow us to empirically investigate how students in online communities negotiate and co-construct TimeSpace as a single dimension during the institutionally framed agenda of an online language course. We argue that in order to understand and empirically study such encounters (or sites of engagement), it is fruitful to use the epistemological lenses of TimeSpace as well as decolonial concepts like Third Space and Hybridity. This allows for an analytical shift in focus, from what happens inside *a* space or *a* community, to what occurs at the boundaries, *in-between* (virtual) spaces.

Our results highlight the need to focus the distributed-discursive and the discursive-technological constitution of participants' worlds (i.e., humans-in-

concert-with-artifacts in the shared space[s] of the virtual classroom), where the boundaries of what is real-tangible and what is curtailed-obscure become both fluid-diffuse and concrete-tangible. Dismantling of dominant colonial assumptions such as monolingual-monomodal communication, based upon a one-nation-one language ideology, it is suggested, gets facilitated by present day media practices.

1. Introduction. Learning On-The-Go

As digitally mediated communication (henceforth, DMC) increasingly becomes a dimension of everyday life across the globe, especially in the global North, a greater number of individuals have access to newer ways of engaging in institutionalized learning on-the-go: students do not need to commute to the physical location of the university where formal courses are offered. This provides them the opportunity to choose to be on-the-go for reasons other than participating in formal education. They can also choose to stay at home and continue to avail of the opportunities within higher education. Such openness, flexibility, and a high potential for inclusion are indeed characteristics that have made online education very appealing for a number of institutions and for a variety of reasons: online education aims to open its doors to a larger cohort of potential students and to ‘educate the masses’, offering courses for everyone with an internet connection. Learning here (i.e., in institutionalized educational settings) can be conceptualized in terms of participation in distributed networks of relationships across physical, geopolitical, as well as virtual spaces (Ito, 2008). In the educational context of the geopolitical spaces of Sweden the term *på distans* ‘at a distance’ was first defined in a national report from 1998. The term alluded to four conditions related to participation in online learning: the fact (a) that students are separated in time and space, (b) that communication is somehow mediated by technology, (c) that the course is organized by an institution, and (d) that teaching occurs primarily at the individual level (Utbildningsdepartementet, 1998). The re-conceptualization related to *på distans* appears to have clearly colored how subsequent reports during the next one and a half decades frame these issues. The definition of *på distans*, in a report from 2008, highlights how teachers and students in online courses are *fysiskt åtskilda* ‘physically separated’ (Skolverket, 2008). However physical separation, including flexibility in terms of time needed to access course materials and so on, has become less problematized more recently. This emerges more centrally in reports in K-12 context, where teaching *på distans* or *fjärrundervisning* ‘distance teaching’ is indeed getting the attention of policy makers, media, and institutions. Thus, online education in the geopolitical spaces of Sweden gets framed in terms of possibilities, openness and flexibility, for both adult learners and K-12 students.

1.1 Digital Time and Space

Language and language events are, in online communities, dislocated from fixed positions in time and space. As a consequence, the ‘spatial-temporal unit’ in which

individuals are socialized is no longer the location of one's residence, work or education, but the network of (transnational) relationships they can access (Cousin, 2005; Messina Dahlberg, & Bagga-Gupta, 2014). In a similar vein, Leander, Phillips, and Taylor (2010) discuss a transition from the concept of "classroom-as-container," the space where almost all educational activities are assumed to take place, to a "nexus-like perspective" that highlights the flow of information, materials and resources that "permeate the classroom from every direction" (p. 332). Indeed the classroom-as-container is a conceived space that has, for a very long time, shaped how learning and education have been planned, investigated, and produced, whereas the nexus-like perspective, in contrast, allows an alternative metaphor that explicates the space(s) that is(are) created when people, both inside and outside school or other educational arenas, engage with a fluid (and therefore flexible) supply of large amounts of information and resources. Big scale projects like Massive Online Open Courses (MOOCs) are the result of a long process of digitalization of education, *from* distance courses where primarily only written texts were sent back and forth between students and tutors, *to* more complex texts, that afford participants' communication multimodally framed by digital technology (for a discussion about space in MOOCs and epistemic practices, see Viberg and Messina Dahlberg [2013]). We argue that while metaphors such as the network society (Castells, 2004) or the mychorizae or fungal roots (Engeström, 2007) attend to such fluidity and the interconnectedness of the distribution of knowledge and artifacts in people's lives, there exists a need to investigate a range of issues *around* such connections. In other words, in addition to focusing trajectories and the movement of people and tools, analytical attention needs to focus these microscale movements, including the *space(s)* that afford such movement. In addition, how this dimension is socially co-constructed, or made into being in interaction and the ways in which our conception of space has been shaped by the use of technology is in need of scrutiny. According to Säljö (1999), "what we conceive of as learning will be somewhat different when our communicative practices change" (p. 145) and the same applies to the concept of space which remains an unexamined dimension in discussions regarding the relationship between the internet and education. In large measure the internet is simply considered as "a different context or container for technologically mediated teaching and learning" (Edwards, 2012, p. 205). Edwards suggests that we analytically consider "*spacing* and *timing* as actions, verbs rather than nouns, thus pointing to the ways in which they are *performative* rather than simply existing as properties of the world to be left unexamined" (Edwards, 2012, p. 208, emphasis added; see also Bagga-Gupta, 2012, 2014, in press).

1.2 TimeSpacing in Telecollaboration

Pushing Edwards a step further, we argue that spacing and timing, or *TimeSpacing*, constitute a basic ontological dimension of social life that cannot be considered separately but rather as the result of a process of mutual co-construction *in interaction in situ* not least in DMC. Within educational research on online learning, and more specifically to online language learning, telecollaboration

is primarily framed in terms of “putting pairs of language learners in different countries in contact via e-mail, so that they may learn each others’ languages” (Goodfellow & Lamy, 2009, p.5). We argue that such a definition builds upon an essentialistic view of language, culture and identity, where learners located in one geopolitical space are automatically regarded as experts in one of the language varieties commonly used in that physical area. Our aim in this chapter is to go beyond such essentialistic ideas by reporting on analysis of data where students physically situated across different geopolitical TimeSpaces collaborate with the intention of learning a target language. We thus chose to extend the use of the term telecollaboration to all exchanges mediated by digital technology whose explicit aim is to learn a predefined content. In telecollaboration, participants have limited visual access to one another’s physical bodies or situations. This shapes participants’ adjustment to the constraints and affordances of communication in these TimeSpaces. Thus, we consider the online frame of the virtual classroom as a sociocultural cognitive system (Hutchins, 1995) where participants, in concert with the tools they have at hand (Wertsch, 1998, Bagga-Gupta, 2014, in press), perform specific actions. In the analysis of online courses, explorations of how digital technologies frame participants’ interaction will, it is suggested, provide clues on the ways in which students and teachers negotiate their positions at the boundaries of physical and virtual communities. Studying language-use, or languaging (Garcia 2009, 2010; Linell, 2009) in telecollaboration implies examining the affordances and the constraints of the technology in use. Recent ethnographic explorations illustrate ways in which participants in different (language) learning communities reach mutual engagement and negotiation of meaning in order to accomplish a range of different social goals.

1.3 Some Recent Studies

Malinowski and Kramsch (2014) discuss the constraints of online environments in terms of how the “disjunctures in the flow of space and time profoundly affect the possibilities for heteroglossic language learning” (p. 5). They analyzed interactions during a trans-Atlantic telecollaboration between “American learners of French” in the geopolitical space of California and “French graduate student instructors” in Lyon, France. The explicit aim of this exchange was to facilitate Berkley students’ “*direct* access to native speakers across time and space, an opportunity for *authentic* communication, *genuine* exploration of foreign world-views, *unmediated* negotiation of meaning, and *real* language use” (Malinowski & Kramsch, 2014, pp. 19-20, emphasis in original). Separated by an ocean and situated in a videoconferencing platform, students in the geopolitical state of France were given the opportunity to “apply a French pedagogy of *Français Langue Étrangère* (FLE) to non-immigrant learners with highly educated international ambition” (p. 20). Based on the overarching aims of their study which included improving international understanding as well as the knowledge of “a foreign culture with age peers” (p. 6), Malinowski and Kramsch argue that this context was indeed one that offered the premises for dialogue during the encounters. However, their analysis illustrates that notions of authenticity or the feeling

of unmediated exchange is not successfully achieved in videoconferencing due to the unstable nature of the medium in terms of quality of sound, images, and so forth. This is also relevant in relation to our take on a unified re-conceptualization of a TimeSpace dimension. This is in line with Malinowski and Kramsch's project, including their analytical concerns that build upon the Bakhtinian concept of chronotope (Bakhtin, 1981), where space and time are central tenets in the organization of interaction and the social order therein.

Other similar projects have been initiated at educational institutions around the globe recently (Goodfellow & Lamy, 2009). These shed light on the implications of transnational online encounters as well as the appropriateness of specific designs that support organizational cultural diversity in the context of online learning and telecollaboration. However, Ess (2009) refers to a 'theory-gap' (p. 17) when it comes to the study of how culture gets handled in situated (online) interaction. This holds true for the areas of language and identity that we focus upon in addition to culture (see also Bagga-Gupta, 2014, in press). While a large body of research in intercultural communication continues to be informed by essentialistic views on culture (e.g., high-context, low-context or individualism, collectivism; see Hofstede, 2001; Hall & Hall, 1990), Ess argues for more sophisticated theoretical tools that attend to the "multiple dimensions of culture" (Ess, p. 17; Hasnain, Bagga-Gupta, & Mohan, 2013). Drawing on Hewling (2005), Ess stresses that "individuals online create in collaboration with others their own new cultural amalgamas" (p. 18). It is the study of such complex amalgamas that interests us. Moreover, we would like to contribute to these discussions by drawing attention to a fallacy in thinking wherein human communication is viewed as in need of being specifically defined in terms of 'multicultural' or 'cross-cultural.' From our perspective, this is ontologically and fundamentally problematic, since *all* communication embodies as many cultural, linguistic, and identity positions as the human beings involved in it. As a consequence, it is relevant to study mundane encounters, and particularly online ones, where people's boundary-crossing, including semiotic resources, constitutes norms.

In this chapter we are interested in examining the nature of languaging in situ in digital institutional learning settings. More specifically, the study presented here is interested in (a) exploring the types of practices that unfold at the boundaries of the 'real' and the 'virtual' in telecollaboration or online language learning and (b) throwing light upon participants' mutual engagement across TimeSpace, tools (including language varieties) and modalities (focusing oral and written) inside (and possibly outside) the virtual classroom. The study also aims to show how multi-site research in today's digitalized world (at least in the Global North) relates to the tensions that frame assumptions regarding: what is real vis à vis virtual; what is technologically mediated and, consequently the often used dichotomy face-to-face/online communication. Our study revisits the complexities of languaging and diversity, especially in light of an essentialistic ontology of here/there, real/virtual, I/the Other which continues to heavily permeate the discourse about online education and telecollaboration in present times. In the next section, we will discuss some theoretical issues that frame the study.

2. Boundaries and *Glocal* Spaces: The Virtual Classroom as a Third Space

The glossed concept *glocality* points to the interconnectedness of the local/physical space of each participant in online language learning courses and the global/online spaces enabled in videoconferencing programs where synchronous meetings are scheduled. Our previous work from the data focused here has elaborated this issue (Messina Dahlberg & Bagga-Gupta, 2014) (see also Figures 1 & 2 below). *Glocality*, or what has elsewhere been referred to as the ‘global village’ (e.g., see McLuhan, 1964; Hampton, 2010; Robertson, 1992) highlights the inter-penetration of global and local dimensions of human life and accounts for current complexities when it comes to economical, communicative, and not least educational boundary-issues. Drawing upon ethnographic understandings of language, culture, and identity, Blommaert (2010) adds a further dimension to the study of today’s disrupted spaces of *glocal* interaction by focusing upon the nonuniform, complex semiotic resources that are ‘on the move.’ Here processes of globalization or, as we emphasize, *glocalization*, are understood as precipitations of language features in concert with established identity positions rather than the use of semiotic resources detached from a particular community in a given TimeSpace dimension (Blommaert, 2010). In other words, local resources are used to make sense of global meanings and vice-versa. This analysis is fruitful given our interests related to human behavior in concert with tools at the boundaries of different *glocal* communities.

In the context of online learning and telecollaboration, Helm, Guth, and Farrah (2012) used the concept *third space* to define a dialogue space in an online project where students from the geopolitical areas of the US, Europe, Middle East, and North Africa participated. The Soliya Connect Program (see also Thorne, 2013) was conceived of in order to explore critical issues beyond the “causes of tensions between the A/M [Arab and Muslim world] and Western worlds through weekly synchronous videoconferencing” (Helm et al., 2012, p. 104). Drawing on previous research (such as Kramsch, 1993; Bretag, 2006; Burbules, 2006; Lo Bianco, Liddicoat, & Crozet, 1999), Helm et al. frame third space in terms of a series of definitions and attributes:

a fluid, dialogic space which is constantly constructed and re-constructed by participants ... at times influenced by national/local/ethnic/ cultures but not determined by them; ... a situated space with its own cultures and processes, which may be influenced by communication technologies but is not created by nor located by them. (p. 107)

Kramsch (2011) revisits the notion third space, that she developed over ten years ago (Kramsch, 1993), in relation to language learning and learners in light of today’s increased use of digital technology and people’s mobility. She suggests that “the proliferation of global communicative technology has made intercultural communication into a much more complex endeavor than just a L1/C1 [Language 1/Culture 1] self understanding another L2/C2 [Language 2/Culture 2] self from a third space *in between*” (2011, p. 359, emphasis added).

In summary, it seems that a third space, deriving from a decolonial framing,

incorporates, if used in the field of ‘second language learning,’ a prescriptive flavor, that, in turn, burdens the concept with a normative dimension. Thus the third space becomes, in theorizing the so-called intercultural exchange or telecollaboration of ‘language learners,’ an idealized place that offers a good climate for dialogue, a place where no hegemony potentially exists since all cultures are ideally at the same level, or rather, they are put on the table for their own sake, with the aim of understanding the ways in which they are supposedly ‘different’ from one another.

We wish to use the concept *third space* to frame the communicative TimeSpace that constitute *virtual classrooms*. The notion of third space emerges from a decolonial endeavor that attends to and understands the enunciation of cultural difference. It is a cultural and semiotic TimeSpace of openness and hybridity, where, in the words of Bhabha (1994), there is no room for a dualistic representation of the relation between Self and the Other. The characteristics of openness and in-betweenness are fruitful for our take on online learning. Here the emphasis is put on the third space as a TimeSpace of dialogue that *derives* from its hybridity rather than being created *for* it. In other words, dialogue is a result of and not what creates the third space. Without interaction, there is no space, or time. A third space is a site of transition “between the subject of a proposition ... and the subject of enunciation” (Bhabha, 1994, p. 53), thus entailing both an aperture but also a closure to what it means to communicate digitally through an internet connection across geopolitical borders. This fluidity of positions and languaging (Garcia, 2009; see also Bailey, 2007), occurring in and across the boundaries of the students’ multiple offline and online communities, offers alternative ways of considering how human beings categorize the world in terms of identity, language and culture (Hasnain et al., 2013), as they endeavor to belong to (and analyze) *a group, a community, a tradition*. The concept *hybridity* is also linked to this TimeSpace connection in terms of how discourses regarding different language varieties, identity positions, including identities and cultures of nation-states are framed and come into being during the online encounters.

With these as introductory and theoretical starting points we now move onto methodological and analytical issues that frame the study presented here. Section 3 provides a background of the ethnographic nature that frames our study. Section 4 illustrates the analysis of everyday life in the virtual settings that are focused. Section 5 thereafter discusses the findings and issues that have arisen in the study of how participants frame a TimeSpace dimension of the glocal community in relation to our analytical focus on language, culture and identity. Our study offers alternative perspectives on the analysis of interaction at the boundaries of different online/offline; real/virtual communities.

3. Methodological Considerations

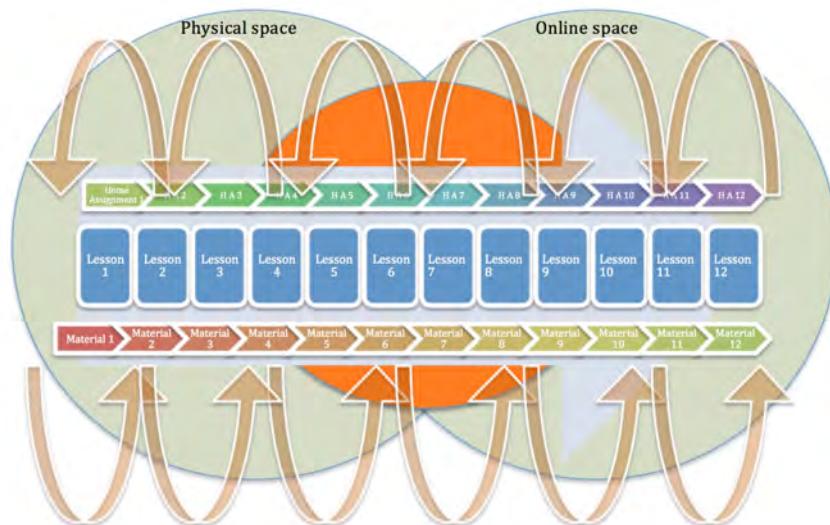
We draw upon ethnographic data from a project at the CCD (<http://www.oru.se/humes/ccd>) research group in Sweden. Our anthropologically framed study takes sociocultural and decolonial perspectives as points of departure and focuses upon two types of data: (a) screen recordings of online sessions of an *Italian for Be-*

ginners course (40 hours) offered by a Swedish university (Messina Dahlberg & Bagga-Gupta, 2013, 2014 [<http://www.oru.se/English/research/CINLE>]) and (b) national policy documents related to “distance education” and assessment (2000-present).

3.1 On Data

Our empirical materials allow us to track students’ interaction online and their use of a range of tools and inscriptions across TimeSpace. Figure 1 illustrates the organization of the online course, which is comprised of a series of lessons facilitated by videoconferencing once a week over one study semester. Besides these synchronous meetings, the students had access to course materials consisting of different tasks every week. They were expected to study these ahead of the lesson as well as attend to weekly home assignments after the lessons (HA in Figure 1).

Figure 1
Cyclic Pattern of an Online Course During One Academic Semester.



Note: The central orange space, at the boundaries of physical and online spaces, represents the virtual classroom.

In other words, the course organization has a cyclic pattern in terms of the texts and discourses that are consumed and generated throughout the course semester. From 8 to 10 students congregate weekly through the videoconferencing program, at times with the teacher present in a plenary session in the virtual room, and at other times in breakout rooms where students work in two-three member subgroups without the teacher. While Figure 1 illustrates the organization of one study semester (approximately 15 weeks), the data-set in the CINLE project is made of courses ranging from Italian for beginners I to III across three terms. The data in the project include the course materials and the meetings from the first and

the third term of study.

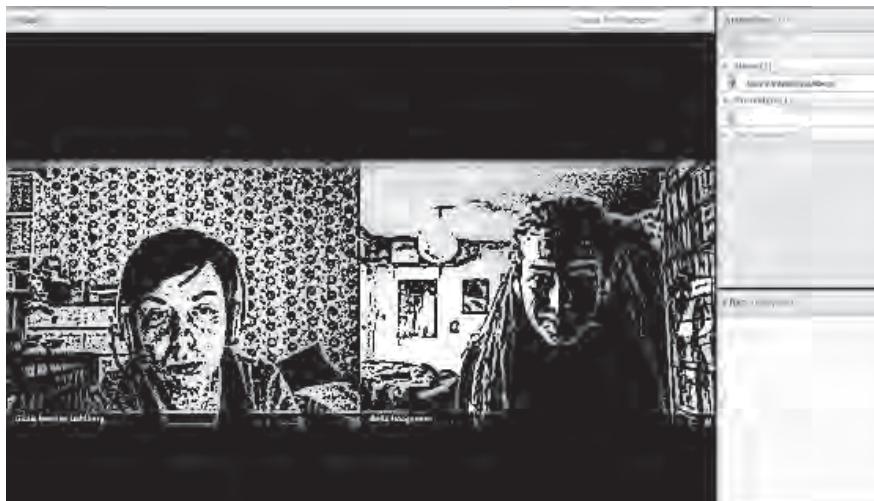
The organization of the course and the fact that it is delivered completely online, allows students to be flexible in TimeSpace, although the synchronous mode of the weekly sessions creates some boundaries in terms of the time-slot when all participants need to be online simultaneously in accordance with the course schedule.

The participants (who are part of the data in this ethnographic project) joined the course, offered by a Swedish higher educational institution, from different corners of the world, although most of them were located in the geopolitical spaces that currently constitute Europe. We have, in our previous work (Messina Dahlberg & Bagga-Gupta, 2014), framed participants in such online courses in terms of *transmigrant* or *transnational* people. The identity position of an online student provides opportunities to join digital spaces precisely because what such a student wants to access is learning material and assessment which is ready to use and institutionalized without getting entangled in logistical issues. The course has a syllabus and participants get university credits on completing it. The course materials include weekly plans with reference to a range of tasks that students are required to complete every week. The schedule as well as the weekly plans and the tasks are available in the course learning management system, Fronter.

Figure 2 illustrates a screenshot of the videoconferencing program used during the course. This program, Adobe Connect, is available to all institutions of higher learning in Sweden and is currently widely used by institutions that offer online courses in higher educational contexts. It affords a range of mediational channels for participants that enable multimodal communication: microphone, web-cam, text-chat and White Board are features used by participants in our study.

Figure 2

The Videoconferencing Program, Adobe Connect, Used by Participants During Synchronous Meetings



The multimodal communication platform potentially allows participants to manage multiple speech-floors simultaneously. This means that, in comparison to face-to-face interaction, alternative representational/analytical tools and techniques are needed to attend to and understand the orchestration of meaning in such sites (Hampel & Hauck, 2006). The issue of an ‘alternative multimodality’ (compared to multimodality in face-to-face interaction) has been addressed by some scholars in the analysis of synchronous DMC (especially vis-à-vis methodological issues). Focus in this literature is often on analytical representations in relation to sequentiality and multimodality (e.g., see Lamy, 2004, 2012; Hampel & Hauck, 2006; Tudini, 2012; Jenks & Firth, 2013). A crucial aspect of DMC lies in its very mediational component: by means of the digitalization of the processes at stake in the online interaction, the tools and inscriptions afforded in the communication *inside* the virtual classroom become visible and can be accounted for. In our study, an expanded analytical account that considers the multimodality of the online environment is used to attend to the interactional media afforded by such a setting.

Before presenting the analysis of our online data, we discuss some ethical considerations and present a brief overview of the anthropological dimensions related to our methodological and analytical standpoints.

3.2 Ethical Considerations in Netnography

The access to the online interactional and textual material in our project was enabled after we received informed consent from each student in the courses that were followed. Information about CINLE project was sent via e-mail to the students and teacher. Furthermore, one project member informed the course participants about the research project at the first meeting in the course in a videoconferencing session. The interactional data was created through screen recordings of the weekly meetings, enabled by an application embedded in the videoconferencing program. Although students and teachers were reminded at each meeting of the netnographic recordings, the online recording system is more unobtrusive when compared to a video camera in a physical classroom. Thus the participants in the meeting could potentially forget that their meetings were in fact being recorded. One important ethical aspect that needs to be highlighted in relation to netnography relates to the issue of the field itself. The field is not bound to one space but is in fact as “fractured” as the number of people who participate in the project. One way of dealing with such complexity is to maintain contact with the participants, requesting them to provide materials such as course-related notes that were not shared in the public spaces of the virtual classroom. While an ethically responsible online “scraping” potentially contributes towards a more in depth understanding of the field, it also creates very large data sets. However this issue is common to ethnographic data-creation more generally, rather than being specific to digital research field(s). Our take on netnography and digital anthropology is that such access to potentially very extensive amounts of data does not differ from qualitative research methods in a so-called predigital age. Rather, as we will discuss in

further detail below, there continues to be a need for what to focus upon and what to leave out in the analysis.

3.3 Anthropological Perspectives: (Re)thinking the Digital

An empirical access to data allows, along with a vantage position that we have as analysts, for an anthropological interpretation “as constructing a reading of what happens” (Geertz, 1973, p. 16). Thus the presence of such data means accessing a *symbolic system* through an inspection of events of what occurs in the everyday life of participants’ during naturally occurring online encounters of the course. Ethnographic description is then, in line with such a semiotic approach, “a collection of ethnographic miniatures” (Geertz, p. 20) that, in concert with the conceptual world we position ourselves in as scholars, provides us with tools to converse with them and understand them. Participants, in the mundane interactions that this study reports on, have limited access to one another’s body orientations, gestures and the surrounding environment in terms of the artifacts that they may orient towards and topicalize in talk. Luff et al. (2003) draw on Schutz’s terminology of “reciprocity of perspective” and “interchangeability of standpoints” to describe how participants in a situation of online collaboration, take for granted that “what they see and how they see it corresponds to how the co-participant sees and views the environment” (Luff et al., 2003, p. 55).

As a consequence, a different anthropology is called for in order to attend to the nature of fractured ecologies in digital spaces, as exemplified by the online course focused in this study. Anthropological approaches to the study of technology focus both the interactional space framed within a particular social practice, juxtaposing it against a wider picture “that both impacts upon and transcends that frame” (Horst & Miller, 2012, p. 4). In other words, digital anthropology seems to support a dichotomist view of the world only in order to explore the digital *as opposed to* a nonmediated, predigital, noncultural world of our ancestors born before the advent of digital technology. By doing so, digital anthropology, as a subdiscipline, highlights that this view of a predigital and nonmediated world is only an illusion since communication is always framed by mediation. The primary difference here being that, in ‘real’ life, the mediational means have become so effective that they are invisible to us.

Following this line of thought, one could argue that digital anthropology is the study of human beings in concert with tools in the digital learning spaces of today’s educational landscape (at least for participants in and from the global North). However, an important message that emerges from digital anthropology is that such alternative areas of education are just as real as other physical spaces in the world. This is also what guides us in our understanding of languaging, including so-called multilingualism in institutional environments.

As soon as we start looking closely at real people in real places, we see movement. We see languages turning up in unexpected places, and not turning up where we expect them to be. We also see them taking unexpected forms. Just moving to an idea of bilingualism is not enough containment for this movement

and multiplicity, probably not under any circumstances, but certainly not under current ones. (Heller, 2007, p. 343)

It is this idea of unexpectedness and the focus on real people (and tools) on-the-go that captures the idea of disruption and noncontinuity of DMC and, in order to understand such processes, it is crucial to study the situated moment-by-moment interaction that constitutes virtual learning sites.

4. Analysis—(Im)mobilities in TimeSpace

Students' interactions during two selected meetings from the project data are used here to illustrate how the (im)mobilities in TimeSpace are co-constructed in synchronous online environments. In the piece of naturalistic interaction represented in Excerpt 1 below, students Anna, Sofia, and Maria are in the middle of the eleventh online lesson (see Figure 1 above) in the third term of study in the course Italian for Beginners III. This particular excerpt is taken from a breakout session, where three students without the teacher are discussing the physical place where they are situated currently, as well as their opportunities of attending an Italian course while living in different parts of the world. The students are towards the end of the half an hour breakout meeting, about 25 minutes from its start. The task assigned for the current week in the course was to discuss 'good manners in different public spaces.' A series of questions have been provided by the teacher as points of departure for the discussion. Just before the beginning of Excerpt 1, Anna announces that she needs to leave the meeting for a couple of minutes in order to attend to her cooking in the kitchen. When she announces that she is back on the videoconferencing meeting, the ongoing conversation takes an unexpected turn. The students orient towards each others' physical spaces, abandoning the set of prepared questions and instead start talking about the weather, including their current physical and geopolitical locations.

Excerpt 1: Doing *distanskurs*

- 27 Anna: ((laugh)) Sofia dove abiti?
 ((laugh)) Sofia where do you live?
 (4)
- 28 Sofia: eh io abito a Londra [ehm]
 eh I live in London [ehm]
- 29 Anna: [a Londra!] [in London!]
- 30 Sofia: sì ehm penso che anche qui il tempo è simile [(xxx)]
 Yes ehm I think that here also the weather is similar to [(xxx)]
- 31 Anna: [sei inglese?] [are you English?]
- 32 Sofia: m?
- 33 Anna: sei inglese?
 are you English?
- 34 Sofia: no (.) sono svedese ma abito qui per sei anni
 no (.) I'm Swedish but I've lived here for six years
- 35 Anna: lavori a Londra?
 do you work in London?
- 36 Sofia: sì adesso sì ma ho studiato all'università anche (.) ma adesso ho finito e lavoro adesso
 yes now yes but I also studied at the university (.) but now I've finished and I work now
- 37 Anna: e continui un po' in Svezia ((laugh)) con questo distanskurs ((laugh))
 and you continue in Sweden ((laugh)) with this *distance course* ((laugh))
- 38 Sofia: sì ((laugh))
 yes ((laugh))

Transcription Key

<u>Underlined</u>	denotes that the word/syllable is focally accented
?	rising intonation, not necessarily a question
!	strong emphasis, with falling intonation
(.)	micro- pause
(1)	pause in seconds
((laugh))	verbal description of actions noted in the transcript, including non-verbal actions
(xxx)	indicates a stretch of talk that is unintelligible to the analyst
e::m	one or more colons indicate lengthening of the preceding sound
no-	a hyphen indicates an abrupt cut-off, with level pitch

In the English translation

No emphasis	original utterance in Italian
<i>Italics</i>	original utterance in Swedish
Bold	original utterance in Dutch

In line 27 Anna inquires about Sofia's physical location. Sofia's answer in line 28 refers to the physical space of a mega-city: London. Anna orients to this with another question and asks whether Sofia is English (lines 31 & 33). Thus the geopolitical position (London) becomes the proxy for a specific nation-state identity position (English/British). Sofia positions herself as Swedish (line 34). However,

in the same turn and without a pause, she adds that she has lived in London for six years. This triggers Anna's next query regarding Sofia's occupation in London. Sofia provides a short account in which she positions herself in terms of being a former university student and her current position of an employed person (line 36). Anna's response in line 37 is of special analytical interest: she uses the verb form *continui* 'you continue,' referring to Sofia's identity position of a *former* student; she orients towards the geopolitical location of Sweden in relation to *questo distanskurs* 'this distance course.' The demonstrative pronoun frames the TimeSpace dimension of the course Sofia and Anna are involved in, at that moment and place. They are there and then, in this *distanskurs*, in Sweden. The contradiction in terms of taking an Italian course offered online by a Swedish university is oriented towards by Anna's laughter in concomitance with her utterance in line 37. Furthermore, Anna uses the language variety Swedish to name the course, even though all the interaction in this slice of life takes place in the language variety Italian. The chunk 'distanskurs' thus becomes a sign that indexes what they are doing right at that moment, independently of the literary meaning of the word item 'distanskurs'. They are doing *distanskurs*, in Sweden, on the internet, in London as well as in Anna's geopolitical location, that we know from previous interactions is Amsterdam. Thus such physical places, as well as the distance course they are attending, become, in interaction, important referents which allow the students to frame their positioning inside the online space, and yet at the boundary of different online and offline communities.

After exploring languaging in a student group at the end of a meeting, let us focus on students' languaging in the middle of a task where they are required to talk about a friend. The task specifications require that they describe a friend by deploying a set of adjectives that they have recently studied in the language variety Italian (see examples at http://ikt.du.se/giulia_messina_dahlberg/CALICO_Appendix_A_C.pdf). Excerpt 2 is a slice of interaction taken from the seventh lesson in the first term of study (Italian for Beginners I), during a breakout session where Anna, Olle and Per are discussing Anna's friend. While Olle and Anna have a dominant role in the oral mode during the discussion, Per's presence and engagement are revealed at the end of the excerpt, in the written mode.

Excerpt 2: Nationed and gendered identity-positions on-the-move

Time	Audio	Text chat
2:39	13 Anna: il mio amico si chiama Joren? (.) e:::m (.) Joren abita::: con me? my friend's name is Joren? Joren lives with me? 14 con me i- no-a: alla (.) with me at-n in 15 stessa (.) casa? samma hus the same (.) house? same house 16 Olle: mhm? ((clear throat))	
3:17	17 Anna: ha ventisei anni e lavora:: e:m i:n un-un museo ad Amsterdam [he] is 26 (years) and [he] works at a museum in Amsterdam 18 in (XXX)museum at [the] (XXX) museum 19 (2) 20 Olle: ok? e::: parla (.) un poco e: del suo carattere (.) como-come è? tell a bit about his character how-how is [he]? 21 Anna: oj! ((laugh)) e è:::m socievole? (.) socievole e:m divertente (.) intelligente [he] is sociable? sociable funny intelligent 22 (.) hyperaktiv ((laugh))e:::m e::: onesto? (.) e:::m e allegro hyperactive honest? and glad 23 (2) 24 Olle: mmm! ((clear throat)) e:::m è u:n amico o un amica? is [this person] a male- or girlfriend? 25 Anna: amico [male]friend 26 Olle: amico (.) come si chiama? lo- jo-? [male]friend what is [his] name? 27 Anna: Joren! (2) [un ragazzo] [a boy] 28 Olle: [Joren!] 29 Anna: Joren 30 Olle: ((clear throat)) Joren (.) è u::n è un nome:: olandese? is [it] a Dutch name? 31 Anna: e:::m no è un nome:: e:: island- e::: [island-ico?] ((laugh)) [it] is a::: Islan- name e::: ::: [island-ian?] (ah ja:::) 32 Olle: come si scrive? how do you write [it]? 33 Anna: e: oj! du stavar je: vänta jag skriver här (2) Joren! you spell je: wait I write here Joren! 34 Olle: m::: det är (2) det är nät som Göran egentligen it is it's like Göran actually 35 (2) 36 Anna: ah lite! lite lite ((laugh)) e::: e il tuo amico Olle? (2) come si chiama? a little a little and your friend Olle? what's [that person's] name? 5:40 Olle start to answer Anna's question	Anna: Joren Per: islänning = islandese

Some moments before the opening (line 13), Olle orients towards the position of moderator in the exchange, reading the questions of the task at hand. Anna's answer in line 13 is a direct response to this. She names her friend in terms of amico 'male friend,' and with his proper name Joren (line 13), thus appointing an identity to this person in relation to gender and name. She furthermore accounts for Joren's identity positions in terms of the location of his home, his age, and his work status. After a 2 second pause (line 20) Olle orients again towards a moderator position when he poses a second question, about the friend's character. Anna

responds with a series of adjectives (line 21). These are in all likelihood identical to the preparation material that they have access to (see http://ikt.du.se/giulia_messina_dahlberg/CALICO_Appendix_A_C.pdf). The rising intonation after each item illustrates Anna's uncertainty about their use (in terms of normative issues of correct pronunciation and grammar) in relation to the task at hand. Her laughter after the item *hyperaktiv* 'hyperactive' produced in the Swedish variety and thus 'not allowed' in her account supports this interpretation. After the next pause in line 23, Olle poses another query, not on the list, about the friend's gender. Joren's gender has been topicalized in Anna's previous contributions in the semantic units *amico* (line 13), *onesto* and *allegro* (line 22). These units all end in *-o*, the gendered morpheme that indexes masculinity. Olle's query in line 24 triggers a series of turns that orient towards Anna's friend's proper name, Joren, in a range of different ways. Firstly and in relation to the issue of gender, Anna's appropriate use of one gendered substantive and two adjectives appears to provide inadequate clues for Olle: he is unable to detect whether Joren is a male or female name. Secondly, the national identity position that derives from this name appears to confuse Olle who asks whether it is a Dutch name (line 30). Furthermore, Olle appears uncertain about the correct use of the name and possibly its spelling, too, in line 32 since Anna attends to this issue both in the oral mode and in the Swedish variety when she says that she is writing *här* 'here.' Anna thus frames the space of the virtual classroom in terms of the shared space of the here and now including the oral and written modes. The written outcome of Anna's writing becomes visible in line 33. Furthermore, Anna's uncertainty in the use of the adjective *islandico* in line 31, when she refers to Joren's national identity, is oriented towards by Per. He writes the appropriate form in the chat first in the Swedish and then in the Italian variety and uses a mathematical sign for equal.

The analysis of Excerpt 2 highlights that Olle continues to focus the name Joren in terms of the bearer of national identity. He provides the Swedish counterpart of the name, Göran in line 34, using the Swedish variety, following Anna's languaging in line 33. Anna starts her turn in line 36 after a 2 second silence by acknowledging Olle's previous turn in the Swedish variety. She orients thereafter towards a moderator position herself, returning to languaging in the Italian variety, inquiring about the name of Olle's friend, thus starting a new exchange where Olle is required to deliver the answers (this transpires after the end of the interaction represented in Excerpt 2).

The above analysis also highlights the different foci of this chunk of interaction in terms of the shifts of what gets foregrounded by participants and what remains in the background. For example, Olle's turn in line 26, where the semantic unit *amico* is reiterated, is an orientation towards language as a code rather than a message, since in line 24 Olle pronounces the units *amico* and *amica* by incorporating an inappropriate stress in the second syllable. Anna orients to this in her response at a communicative level, as well as by using the appropriate form, stressing the first syllable, in line 25. Lines 24-26 illustrate how, in these kinds of online encounters, a tension exists between language as a code that should be practiced and 'correctly used' and language as a communicative tool that expresses meanings

and enables intersubjectivity. Following this line of thought, languaging in lines 33–36 also indexes this type of tension: languaging to learn the idealized system of the target language and languaging to create meaning, with the purpose of driving the conversation forward. The Swedish variety in this example is used parallel to a shift at two levels: (a) a pragmatical level where languaging to know things at a metalevel can be contrasted with languaging to do things and push the engine of the interaction forward and (b) a symbolic level where participants achieve different goals and orient towards different identity positions every time there is a shift in the language variety in terms of the prosody of the discourse (e.g., higher pitch in lines 14 or 22) or the mode used (oral and/or written). The tensions and boundaries created by these kinds of shifts are permeable and fluid. They create spaces for misunderstanding, but also entail, as we have argued elsewhere (Messina Dahlberg & Bagga Gupta, 2013, 2014), a potential for learning.

In sum, the analysis of the naturalistic data represented in Excerpts 1 and 2 highlights TimeSpace dimensions in the virtual classroom: space is oriented towards by participants in relation to where one lives, where one works, and what language varieties one uses both in written and oral modes in the shared space of the virtual classroom. The language variety Italian is oriented towards in the interaction for task-related activities in Excerpt 2 and it is used more consistently throughout the interaction represented in Excerpt 1. The Swedish variety is used as a vehicular resource and as a sort of ‘talking into brackets’ or ‘out of frame’ in Excerpt 2 (lines 30–33). Furthermore the language variety used by participants has a bearing on how an identity position is made relevant, as was illustrated through Olle’s and Anna’s cases in Excerpt 2.

The analysis of the two slices of interaction illustrated in Excerpt 1 and 2 point to a further issue in relation to the intersections of dimensions of TimeSpace at the boundaries of the communities in which the participants orient towards inside the virtual classroom. Two intersections have come to the surface in the analysis. *Firstly* this can be seen in terms of how participants frame the here and there of the virtual classroom and the interaction where deictic and indexicals are deployed. *Secondly*, such orientation towards TimeSpace is also attended to by participants at the intersections between physical and virtual spaces. The boundaries of the latter get both blurred and are at the same time magnified by the mediational means of the communication mediated through digital technology. In the nontangible third space of the virtual classroom, where the target language is both a medium and a goal in participants’ communication, positioning in and through languaging is central: the ways in which different language varieties and modes are used have repercussions on how participants orient towards one another in the interactional spaces of the virtual classroom.

Finally, the analysis also highlights the fluidity and hybridity of communication at the boundaries of a glocal community but also of semiotic resources and repertoires: participants draw upon different means in order to make sense of the interaction going on *here* (i.e., their physical spaces) and *there* (i.e., their shared online spaces). The analysis shows, however, that such issues of sharing spaces are problematic in the kinds of institutionally framed interactions that the excerpts

illustrate. The students share the digitally mediated spaces of the virtual classroom but also a range of materials that frame their choices of what to talk about and what gets partially curtailed inside the virtual environment. Students orient towards the course material using media that are not transparent to the participants or to us as analysts. We, thus, can only (re)create such shared spaces in the ethnographic processes of data creation and representation. However, the institutional frames of the online course are present inside the virtual classroom and both shape and get shaped in a mutual movement between the offline/online world, the institutional/private, and the virtual/real. The challenge of representing such movement lies in what Bhabha (1994) calls the “dialectic of the unrepresentable” (p. 315), that is, the partiality in the (re)production in scholarly texts of the fluidity of different modes and tools in virtual encounters, whose spaceless dimensions, transnationality, landlessness, nonlinearity disable a representational visibility for the analyst.

5. Decolonial Spaces in Present Glocal Times

The analysis and ideas presented in this chapter suggest that language varieties used in institutional *glocal* communities can be understood in terms of what Pennycook (2012) calls complex ”mobile resources” (p. 27) and the increasing attention that is being paid to the fluidity in languaging across modes, time, and space (Bagga-Gupta, 2013). Attending to the fallacy of thinking in terms of fieldwork in static geopolitical-linguistic spaces and communities, our results highlight the need to focus the distributed-situated and the discursive-technological constitution of participants’ worlds (i.e., humans-in-concert-with-artifacts; Bagga-Gupta, 2014) in the shared space(s) of the virtual classroom. Thus, in the online space of the virtual classroom, temporal-spatial indexicals like *now*, *then*, *here*, and *there* are relevant in the interaction and become proxies which frame the TimeSpace fractured dimensions *through* the physical locations of the participants. Dismantling of dominant colonial assumptions such as monolingual-monomodal communication based upon a one-nation-one-language ideology, it is suggested, gets facilitated by present day media practices. Our ethnographic study suggests further that the epistemological frame of the third space contributes towards a nuanced understanding of participants’ encounters at different scales. The space of the institutional academic course in terms of TimeSpace and organization is understood as a place of transition between what needs to be prepared before a meeting and what needs to be done after it. Such transitions are attended to by participants in languaging when they refer to the course materials, the tasks to be completed and to previous and future encounters. The TimeSpace dimension(s) of the online course, it is suggested, is what participants have in common, and thus it embodies their shared history within the space of the virtual classroom.

The analysis of the talk-in-interaction at the microscale highlights the hybridity and fluidity of communication in such spaces in a range of different ways: *Firstly* the languaging is plurifaceted insofar as participants topicalize different parts of the discourse and orient towards a variety of identity positions. This is made relevant in relation to two specific scales of understanding: one is the metalevel

discourse which participants use to ‘progress’ in their awareness of the language variety they are learning and this legitimizes their membership in these spaces. The other is how such hybrid languaging bears messages that are oriented towards by participants as relevant and meaningful regardless of the appropriateness of the outcome. *Secondly*, the analysis demonstrates that access to artifacts that are not directly visible to participants expands the possibility of representing and making sense of what transpires among the individuals who indeed have limited visual access to one another’s bodies and artifacts in their physical spaces, thus erasing the boundaries of what is here and there, online and offline.

Thus, ontological dichotomization of language, culture and identity does not lead to finely tuned understandings of what is going on in terms of knowledge sharing and co-construction among individuals because, as the analysis carried out in our work shows, individuals continue to shape their positionings towards one another using frames that are not different from an idealized face-to-face encounter where participants are supposed to have an unveiled access to context. Dimensions that afford or constrain mutual understandings are related to the types of identity positions participants are granted and actively take in situ in the embodied TimeSpace dimension of the online encounter, irrespective of the curtailed or mediated aspects therein. Our analysis from sociocultural and decolonial perspectives has illuminated the learning dimensions in the third space of the virtual classroom both with regards to new semantic units of the ‘object’ (Italian) but also in relationship to how the movement of tools, artifacts, and the bodies can be interpreted and followed when what participants share is a screen image in the digital device they deploy and that mediates their communicative endeavors.

Doing *distanskurs* means learning to manage use of this mobility to orient in an environment which is not defined by walls, the ceiling, or the floor. And yet, as in any other space, institutional or private, it is what participants *do* with the resources they have at hand that defines the connections that are made among humans-in-concert-with-tools in terms of how relevant they are for the individuals involved and thus what types of learning experiences they can take home with them, wherever home is.

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Chapter 15

Examining Cognitive Presence in Students' Asynchronous Online Discussions

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Summary

This chapter focuses on the type of cognitive processes and benefits that language learners experienced during a computer-mediated collaborative task. Exploiting the model of content analysis proposed in the practical inquiry model by Garrison, Anderson, and Archer (2001), this case study investigates interactions between Irish undergraduate students and French Erasmus students who participated in an asynchronous threaded discussion forum to develop their intercultural competence. The qualitative analysis of students' postings, reflective reports, and posttask questionnaires shows that the online dialogues afforded both groups of students a unique opportunity to practice their higher order thinking skills, to share and expand their (inter)cultural knowledge, and to reflect on their own learning. The findings suggest that the design of the online task and the level of students' engagement play an important role in the type of cognitive activity in the discussions. The study concludes that there is a need for further research to explore the dynamic relationships among the teaching and social and cognitive presences in an online discussion forum in order to achieve intended educational outcomes.

1. Introduction

As part of the growing interest in Web 2.0 tools to enhance language learning, online discussion forums have dramatically gained in popularity over the past decade and have become an integral component of many distance or blended (i.e., a combination of online and face-to-face) learning programs in higher education (Graham, 2005).

Through the use of computer-mediated communication (CMC), language teachers seek to create online learning environments which provide learners with an authentic context and discourse in which the world of formal education interacts with the wider world (Thorne, 2006) and with an interactive venue for (tele) collaborative learning with peers and/or native speakers of the target culture (for a review, see Guth & Helm, 2010). Language teachers tend to favor asynchronous

(delayed) computer-mediated communication (ACMC) to synchronous CMC (SCMC) due the inherent feature of the medium which gives extended time for learners to process input and to reflect on what they want to express (Andresen, 2009). Moreover, some researchers argue that ACMC participants have to generate more elaborate contributions than in SCMC discussions and this in turn fosters a greater level of reasoning and a deeper level of critical thinking (Hammond, 2005; Wang, 2010).

While there is a growing body of research on the cognitive activity of CMC in distance-learning programs, this paper focuses on how (A)CMC can be used in a blended on-campus language course to complement classroom activity. The purpose of this study is to assess the cognitive dimension of a task-based online discussion forum by examining the type of cognitive processes that learners engage in during their online interactions and by exploring students' perceived learning outcomes of their online learning activity.

2. Background

2.1 Promoting Critical Thinking in Online Learning

The use of CMC in language learning allows students to engage in interactive and collaborative activities with native and nonnative speakers in a blended or entirely online setting. Textual interactions have been, and continue to be, the most typical kind of computer-mediated conversations (Herring, 2011); these typed exchanges include two popular forms of ACMC: e-mail exchanges and discussion forums.

Research has shown that some blended-learning models can transform learning in the sense that learners are no longer simply recipients of information but active constructors of their own knowledge through dynamic interactions in the new media (Bonk & Graham, 2005). This paradigmatic shift of knowledge building gives the 'Teacher 2.0' the opportunity to use Web 2.0 to involve students in real world collaboration (Guth & Thomas, 2010) in order to foster a more open knowledge sharing environment and to orient students towards critical thinking (Dooly, 2010).

Indeed, previous studies on text-based communication have demonstrated that ACMC can provide an effective platform for teachers to coach a deeper learning because learners put emphasis on the elements of an argument and the exchange of ideas (MacKnight, 2000); ACMC can also create the conditions for reflective and critical thinking—in contrast with a face-to-face setting or a synchronous (real time) CMC which generate a more spontaneous discourse (Garrison & Anderson, 2003).

However, as some scholars rightly observe, meaningful online discussions do not simply occur automatically (for a review of research of critical thinking in online threaded discussions, see Maurino, 2007). Chen, Wang, and Hung (2009) posit that a carefully constructed design plan determines the success of an online discussion. Empirical evidence from studies on (A)CMC for language learning would seem to support this view. Specifically, studies concerned with factors that affect the amount and quality of online interaction have underscored the signifi-

cant impact of task design and instructor intervention (Hampel, 2006; Kuteeva, 2007; Thomas & Reinders, 2010, to name but a few).

Stressing the need for new pedagogical approaches and practices in CMC, Hampel (2006) incorporates the task design into a three-level model of task development to inform the design and implementation of an online blended language course: approach (applicable SLA and CALL theories), design (task development and teacher and learner roles), and procedure (implementation and use of tasks). Kuteeva (2007) focuses on the task design per se and outlines a number of points that need to be considered when planning an online forum in language teaching, namely “culture, genre, protocol, learning styles, and training for students and instructors” (p. 307). Moreover, Garrison and Cleveland-Innes (2005) who compared students’ orientation to online learning over time and across different courses state that “design—structure and leadership—had a significant impact on the nature of the interaction and whether students *approached* learning in a deep and meaningful manner” (p. 133, italics added).

While it has been found that the teacher’s involvement in online interactions can greatly influence group dynamics (Hauck, 2007), there is a lack of consensus on the level of instructor intervention needed to facilitate student participation and promote deeper learning in asynchronous discussions. Mandernach, Forrest, Babutzke, and Manker (2009) argue that the instructor’s (inter)activity in leading discussions is paramount in fostering students’ critical thinking, emphasizing that the key instructional component is discussable questions. In contrast, O’Dowd (2011) identifies the teacher’s role as minimal in online intercultural exchanges because it is students’ responsibility to take the initiative; he recognizes, however, the difficulty for students to engage in deeper levels of interaction (O’Dowd & Ritter, 2006). Helm (2013) also expresses concerns about the fact that in online intercultural contexts where communication is not moderated, learners tend to talk about safe topics and are usually reluctant to challenge others’ ideas, thus they fail to grasp a meaningful learning opportunity (as pointed to by Beatty & Nunan, 2004) and to benefit from the cognitive value of a true intercultural dialogue (Helm 2013).

Interestingly, Batardière (2013), investigating students’ patterns of use of an online intercultural exchange where the teacher is quasi-invisible, notes that “students’ teaching behaviour [was] evidenced in their online contributions (postings) [and that] the peers’ assistance was usually given in the forms of scaffolding and feedback”(p. 320). This finding somehow sheds some light on the suitability of a nonteacher-led discussion in specific educational settings and supports Weerasinghe, Ramberg, and Hewagamage’s (2012) assertion that not only course design factors—which support collaboration—but also student’s teaching presence can be considered critical for successful inquiry-based learning.

2.2 Assessing Critical Thinking in Online Learning

Critical thinking is both a process and an outcome (Garrison, Anderson, & Archer, 2000). From a process perspective it is difficult to detect critical thinking in online learning. As an underlying construct, it cannot be observed directly but “must be

inferred by analysing ‘the traces’ found in transcripts” (Fahy, 2005, p. 14). The Canadian research group of Garrison, Anderson, Rourke, and Archer developed a model for measuring critical thinking in a community of inquiry (CoI) context in the early 1980s. Following the first decade of the framework, Garrison, Anderson, and Archer (2010) noted that the seminal article for the framework was cited in over 600 scholarly publications. Undeniably, this framework has become a significant tool for online and blended educational research (Swan & Ice, 2010) and is widely used for studying text-based asynchronous online discussion (Xin, 2012).

Grounded in the work of John Dewey (1959), the CoI framework has a collaborative constructivist approach as its core. The framework consists of three interdependent dimensions related to the online learning experience: cognitive, social, and teaching presence. Cognitive presence is “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse” (Garrison et al., 2000, p. 89). Social presence is the ability of participants in the CoI to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people. Teaching presence is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001). According to Garrison et al., deep and meaningful online learning occurs within a community through the interaction of these three presences.

In most of the CoI literature, investigations have focused on one presence at a time. Recently, there have been attempts to look at all three simultaneously (e.g., Shea & Bidjerano, 2009; Garrison et al., 2010) and to make correlations between presences. Also, several scholars (including the principal investigator Randy Garrison) have called for a critical examination of the components of the CoI framework (among them, Garrison & Arbaugh, 2007; Shea & Bidjerano, 2009; Annand, 2011; Xin, 2012).

Subsequently, in an effort to make the CoI model more comprehensive, Shea and Bidjerano (2010) propose to include a fourth construct in the CoI model, ‘learner presence,’ which they define as “representing online self regulation, self-efficacy and attendant effort” (p. 1722). Akyol and Garrison (2011) also recognize learner capacity to self-regulate as an important contributor to successful online education; they explored the possibility of a new component in the CoI framework: the metacognitive construct, which they describe as “the set of higher knowledge and skills to monitor and regulate manifest cognitive processes of self and others” (p. 184). They consequently established that the CoI approach inherently embraces metacognition strategies and that they place the metacognitive dimension at the intersection of cognitive presence (monitoring) and teaching presence (regulating).

3. Theoretical Framework

Since the focus of this study is on the manifestation of cognitive presence as an indication of critical thinking, the PI model (Garrison et al., 2001) was adopted to inform and guide our research methodology. The PI model, based on the more

elaborate phases of Dewey's notion of reflective thought (Swan, Garrison, & Richardson, 2009), operationalizes cognitive presence. The PI model is designed to analyze transcripts of online discussions for cognitive presence.

The PI model defines four phases to describe critical thinking: (a) the initiation phase with a triggering event that begins the dialogue about a particular issue; (b) the exploration phase in which learners move between private reflection and social exploration, exchanging information about the issue at hand; (c) the integration phase in which participants begin to construct meanings or solutions to the issue from the ideas explored in the previous phase; and (d) the resolution phase in which the proposed solution is "vicariously tested" (Garrison et al., 2001, p. 11).

While categories of descriptors and indicators act as guidelines for the coding of discussion transcripts (see Table 1), the process to identify evidence of each of the four phases remains an interpretive process. The PI model indicators should "not be seen as immutable" (Garrison et al., 2001, p. 9), and researchers may find a need to refine or revise the criteria to meet specific analysis needs.

In the same vein, Redmond (2014) proposes a modification to the resolution phase and suggests the addition of a reflection indicator which "would structure and support learners' self-assessment on their learning processes and outcomes" (p. 56).

Table 1
Four-Phase PI Model (adapted from Garrison et al., 2001)

Categories	Indicators
Initiation phase/ Triggering event	Recognizing problem, sense of puzzlement
Exploration phase	Information exchange, divergence, suggestions, brainstorming
Integration phase	Connecting ideas, convergence, incorporating information, creating solutions
Resolution phase	Applying new ideas, assessing and defending solutions, taking direct or vicarious action

3.1 Method

The most frequently used method to assess cognitive presence in online discussions is to analyze transcripts using quantitative content analysis. "Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (Krippendorff, 2013, p. 2). Akyol and Garrison (2013) point out that this approach requires a number of methodological considerations: determining the unit of analysis (e.g., sentence, paragraph, message, or theme), identifying the level of cognitive presence, and ensuring objectivity, validity, and reliability.

In this study, the choice of the unit of analysis was the starting point for coding transcripts. A complete message, which corresponds to a student's individual

posting (Garrison, et al., 2001) was deemed appropriate as messages are clearly demarcated in the discussion threads. Moreover, it would produce a manageable set of units to be coded whereas a sentence, word, or paragraph unit would require an extensive set of coding decisions (Rourke, Anderson, Garrison, & Archer, 2001).

The study corpus consisted of 188 separate postings—approximately 100,000 words—generated by a group of 32 students engaged in 8-week online dialogues. Each posting/transcript was read carefully and coded into one of the PI model's four categories (i.e., trigger, exploration, integration, resolution) or into a fifth category ‘other’ to accommodate noncognitive (off-topic) messages (e.g., greetings or apologies); a code-recode method was used. The author carried out an initial coding of the transcripts and recoded them 6 months later (Fahy, 2005). Only a small number of cases (11 messages) were discordant and required a different classification of the posting. This resulted in an overall intra-rater reliability of 0.94 using the Holsti (1969) reliability coefficient.

During the coding process, it was found that fitting a whole message into one phase could be problematic; some postings contained multiple elements of cognitive presence and displayed evidence of more than one category. The PI model's authors have recommended “coding down” to an earlier phase when it is not clear which phase is reflected, and “coding up” to a later phase when evidence of multiple phases is detected (Garrison et al., 2001, p. 17). In this study, coding up and down was applied when necessary.

The researcher of this study was also the instructor of the course. Early steps were taken to reduce bias and subjectivity in the coding process: to eliminate coder bias toward any student names, student names were removed from the discussion transcripts in preparation for the coding and to reduce coder subjectivity in the judgment and decision process for coding messages, a second experienced coder was asked to code a random sample of the postings (19% of the messages). The author (re)coded independently the same random sample at a later time; in cases where the two coders disagreed, differences were discussed until consensus was reached (Krippendorff, 2004).

In addition, data triangulation was used to minimize the risks regarding validity caused by an exclusive reliance on one source of information and to promote credibility (Denzin & Lincoln, 2000). For each of the research questions, the tangible text-based data from the content analysis were triangulated with information from reflective reports and posttask questionnaires which were considered as more subjective by nature.

3.2 Research Questions

The study was designed to address the following research questions:

1. What types of cognitive activities do students engage in?
2. What factors seem to have an impact on the quality of interaction?
3. What are the perceived learning outcomes of a task-based online forum?

4. Context

4.1 Project outline

The online discussion forum is integrated in a larger project which promotes a three-phased approach. The students, who are learners of French as a second language (L2), have to select a current French sociopolitical issue of their choice, retrieve information on the topic from online newspapers and magazines, and analyze it with a view to producing a piece of work demonstrating thorough understanding of the topic. This individual project aims to broaden students' knowledge of Francophone current affairs, to deepen their awareness of the target culture, and to advance their competence in the target language.

The CMC task is conducted out of class; it starts in week 4 of the 12-week course and runs for 6 to 8 weeks depending on the group dynamic. The learners submit their assignment online and are paired with a native speaker who has expressed an interest in the topic. Students then engage in a discussion with their respective partner. At the end of online activity, all participants have to reflect and report on their collaborative experience. (see the project outline in Appendix A).

4.2 Task Description

The discussion forum was set up on the Learning Management System (LMS) of the institution as a component of a language module. In this case, the LMS is called SULIS and is powered by Sakai. Students are very familiar with this platform (i.e., they visit it on a daily basis for their courses). Prior to the start of the exchanges, a discussion thread was created by the teacher for each topic/each dyad to facilitate both students and native speakers' assignment and not to burden participants with irrelevant information. The Erasmus students—who were not familiar with an institutional virtual learning environment—were given a 30-minute training session on how to access, use, and maximize the forum. The asynchronous communication task was open and not prescriptive, the only clear requirements being that French—the Irish students' target language—was used by both groups of students at all times in the exchanges and that a minimum of six messages should be posted by each participant over the course of the online task with no constraint of frequency or length.

As previously described, the Irish students had to post their sociopolitical commentaries on the discussion forum and start the exchange by asking their Erasmus partner a somewhat controversial question on their chosen topic. Participants were free to express their views and opinions; besides, the dialogue was not restricted to the topic selected. Students could also read other dyads' postings but could not join their conversation. In the closing stages of the project, students were asked to give an overall impression of their online exchange experience and explain whether or not they had changed their views on the topic after their weekly discussions on the forum.

It is important to note that even though the teacher/moderator involved in the project had full access to students' postings, she never directly intervened in the discussions. Any communication with the participants (e.g., technical support,

gentle reminders to maintain momentum, etc.) was carried out separately via email. The assessment of the online task is an integral part of the whole project for Irish students; it is also a graded assignment for the Erasmus students.

4.3 Task Design

This type of project has been running for the last eight consecutive years. The researcher has been guided by the methodological principles of action research which promote the improvement of practice through the cyclical process of action and reflection (Reason & Bradbury, 2001). Thus, students are encouraged to complete an anonymous evaluation questionnaire on their online experience. Over the years, their feedback comments have informed teacher's adjustments to the planning and design of the online task in the following areas: the timing of the online exchange, the choice of topics, and the inclusion of a reflection component. In addition, as the online task was considered central to students' (inter)cultural and language learning, a higher proportion of the overall project grade was allocated to it (see the assessment criteria in Appendix B).

5. The Study

5.1 Participants' Profile

A total of 16 Irish undergraduate students and 16 native speakers of French participated in the project. The Irish students, 11 female and 5 male students, were between 21 and 22 years of age and were enrolled in a fourth-year undergraduate Business and French course; the French module represents 1/5 of their program and 4 contact hours per week. All Irish students had taken part in a collaborative blog the previous year.

The Francophone students, 12 female and 4 male, were between 20 and 22 years of age and were on-campus Erasmus students; they came from French or Belgian universities and were enrolled in a translation class taught by the present researcher. They were unknown to their Irish partners.

5.2 Data Collection

As previously mentioned, the data analyzed in this study was obtained through students' postings (i.e., the electronic transcripts that students created during their interactions on the discussion forum) and through students' feedback collected from two sources: students' reflections on the exchange (completed by 14 Irish students and 12 Erasmus students) and students' posttask questionnaires (completed by 7 Irish students and 8 Erasmus students 2 weeks after the end of the project).

5.3 Data Analysis

The primary data were the discussions transcripts from each of the 16 dyads, totaling 188 individual postings. Each dyad generated between 9 and 15 messages;

one point to note: an average of 12 messages per dyad was indicated in the online task guidelines. The length of the messages varied greatly, ranging from only 48 words to 700 words.

As discussed earlier, a transcript analysis of the 6 (to 8) weeks of interactions within each of the 16 dyads was conducted to examine students' level of cognitive presence using coding indicators from the four phase PI model (Garrison et al., 2001). The distribution of percentages for each category of cognitive presence shows that over half of the postings (57%) were coded at the third phase, integration (see Table 2).

Table 2

Number of Postings per Phase of the PI Model by Dyads 1-16

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	No of postings per PI category
Triggering event	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17/9%
Exploration	2	3	2	2	1	1	1	3	2	6	5	3	6	5	3	4	49/26%
Integration	5	7	10	9	7	9	8	7	7	5	5	5	5	7	3	7	106/57%
Resolution	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	1	8/4%
Noncognitive	0	1	0	0	1	0	0	0	1	0	1	0	2	2	0	0	8/4%
No of postings per dyad	10	13	13	13	10	11	10	12	12	12	9	14	15	9	13	188/100%	

Moreover, for some dyads (5 out of 16), the percentage of messages coded as integration was above 70%. A small percentage of the messages pertained to the final phase of cognitive presence, resolution (4%). A quarter of the postings (26%) were coded in the exploration phase, a level at which students were getting to know each other and were engaged in brainstorming ideas on the topic. These postings were mostly found in the first two weeks of the discussions or in the final weeks when new topics of discussion tended to emerge; a number of messages (9%) were coded as triggering events. These were the Irish students' introductory messages which included a question to spark a dialogue; they were written as part of the task prior to the online sessions.

The following extract from Dyad 9's interactions serves to illustrate how Garrison et al.'s (2001) indicators were identified in the corpus. It also captures student progression through the four stages of cognitive presence and brings to light how their postings built on each other.

Unlike what occurred in some dyads, the discussion presented below is linear (i.e., a posting coded for integration is followed by a posting coded at the same or higher critical inquiry phase). After the initial message from the Irish student, only responses from the Erasmus partner are reported here in order to highlight the gradual impact and inclusion of the Irish partner's comments as the dialogue evolves. The topic of their discussion was *La question sociale dans la crise de l'Europe* 'The social dimension of the Euro zone crisis.'

Posting 3 (Phase 1 –Initiation phase/ Triggering event):

C'est difficile d'envisager un avenir positif pour les jeunes aujourd'hui. Cependant, les incitations ont été introduites, et il y a une que je connais, elle est appelé 'la jeunesse garantir' ... es-tu familier avec ça? (Irish student –female9)

[The Irish student mentions a new European employment scheme to tackle youth unemployment; she tries to redirect the discussion and get her interlocutor involved by asking him if he has heard of it.]

Posting 4 (Phase 2 –Exploration phase):

Tout d'abord pour répondre à ta question, je connais le projet "garantie jeunesse" déjà présent dans certains pays d'Europe. [...] A mon avis, le problème réside dans le manque de confiance des séniors à l'égard des jeunes fraîchement diplômés. (Erasmus student –male 9)

[The Erasmus partner answers her question and then adds his personal viewpoint to the issue. After a monologue, he leaps to a conclusion (i.e., for him, the problem/youth unemployment is caused by older workers' nonsupportive attitude to newly qualified young people). While he builds on his partner's initial contribution, he does not ask for her reaction to his statement.]

Posting 6 (Phase 3 –Integration phase):

Ton argument est efficace avec des chiffres à l'appui. Je ne pourrais pas te contre-dire sur ce point. [...] JD d'ailleurs, j'avais déjà vu un reportage télévisé sur la formation professionnelle des jeunes qui a plus d'effets bénéfique qu'un diplôme d'école. Les jeunes et les seniors doivent aussi y mettent du sien. Tout le monde doit agir. (Erasmus student –male9)

Posting 8 (Phase 3 –Integration phase):

Merci d'avoir soulevé un nouveau point concernant l'expérience au travail [...] tu es très chanceuse d'avoir pu effectuer un stage à l'étranger pendant 8 mois. Les pays comme la France devrait prendre exemple sur le système irlandais [...] Cela ne va probablement pas régler le problème du chômage mais cela aura le mérite de faire bouger les choses. (Erasmus student –male9)

[In postings 6 and 8, the Erasmus student refers to and values his partner's previous messages. He then incorporates information from another source (a documentary on TV on work experience) and from his partner's experience to substantiate his agreement. He also acknowledges the benefits and limitations of her proposed solution (i.e., an internship abroad program as a key to solve the unemployment issue). Overall, he appears more inclusive of the older generation. He also believes that France should draw several policy lessons from the Irish system.]

Posting 10 (Phase 4 –Resolution phase):

Si nous reliers le chômage au nombre de jeunes qui continuent les études, il devient alors clair que cela augmente de façon considérable le taux de chômage chez les jeunes. il faudrait donc spécialiser les jeunes dans des domaines

où le taux de chomage est moins important afin de répartir le travail [...] Je sais que cette solution peut sembler farfelue mais je suis convaincu que la spécialisation dès l'école permettrait de réduire le chomage. (Erasmus student –male9)

[Bringing together various elements that have been discussed ('If we ...'), the student identifies what he believes is the cause of the problem and then provides a rationale for a very plausible solution which he strongly defends (i.e., there are too many young 'qualified/educated' people with no prospect of employment nowadays; and this cycle will continue unless a new and drastic educational policy is implemented: the career specialization/orientation should be made at a younger age with job opportunities in mind).]

The above findings suggest that students had progressed into higher level thinking processes (i.e., the two last phases of the PI) and were engaged in critical reflection.

The analysis of students' comments in the reflection task indicates that students, both Irish and Erasmus, held high perceptions of their learning. They associated cognitive presence with the challenging and engaging dimensions of the intercultural online communication.

One Erasmus student stressed the intellectual dimension of the online exchanges:

Le dialogue [en ligne] est constructif. Il permet l'ouverture d'esprit, la confrontation de deux façons de pensées. J'estime que cet échange a surtout eu une dimension intellectuelle, outre sa qualité interculturelle. (Erasmus student /male)

'The dialogue (online) is constructive. It allows the broadening of the mind, the confrontation of two ways of thinking. I believe that this exchange had especially an intellectual dimension, in addition to its intercultural value.'

Another student referred to the development of critical reflection:

Nous avons aussi parlé sur le système éducatif, l'avortement. Ça m'a permis de réellement réfléchir sur ces questions sociétales. (Irish Student /female)
 'We also spoke on the education system, abortion. It enabled me to truly reflect on these social issues.'

Furthermore, it was clear that students were aware of their culturally biased perspectives:

Il était aussi très enrichissant d'avoir le point de vue de quelqu'un de non-français sur cette question de société en France ; cela m'a permis de porter un regard nouveau sur le mariage homosexuel. (French student /female)

'It was very beneficial to have the opinion of a foreigner on a topical issue in France; it allowed me to view same-sex marriage in a different light.'

J'ai trouvé qu'elle était réceptive au regard extérieur que je lui donnais ; elle a posé un regard critique sur la culture irlandaise; cela a permis à l'interculturalité de bien fonctionner. (French student /female)

'I found that she was very receptive to the outside viewpoint that I was giving her; she looked at her own culture critically; it allowed for a balance intercultural exchange.'

Interestingly, in the feedback questionnaire, 71% of the Irish participants (5 out of 7) agreed or strongly agreed that the online task was intellectually challenging while 86% of French participants (6 out of 7) agreed strongly that it was interculturally challenging. The results for the Irish students can be explained in part by the fact that in the previous year, they had spent six months in France, Belgium, or Luxembourg either for a study-abroad period or for work experience, and, thus, they might have felt that they knew the target language culture. When asked the reason(s) for their choice of topic of discussion, students reported that they had a 'strong interest' in the topic (13 out of 15) and that they wanted to know 'the point of view of a person from another culture' (9 out of 15). Further on, they identified one of the main factors that motivated them to post messages on a weekly basis: '[they] valued the intercultural dialogue.'

This exchange made me understand the importance of not just reading pieces of information but also talk about them with someone from a different culture and background. It made me discover other issues. (Erasmus student)

5.4 Discussion of Main Findings

In this section, results are discussed in light of the three research questions.

In response to the first research question relating to the type of cognitive activity learners experienced, we found evidence of all categories of cognitive presence in the transcripts, albeit with the integration phase occurring more frequently than the exploration and the resolution phases. This finding concurs with those of Liu and Yang (2012) and Akyol and Garrison (2011) where "the integration phase was found to be the most active" (p. 244). The category of resolution had the lowest rate, a result comparable to those of previous studies (Garrison et al., 2001; Meyer, 2003).

As for the second research question on the factors that might impact on the quality of interactions, we contend that, similar to Lee's (2009) CMC findings, L1 partners' expert knowledge and language proficiency provided scaffolding and played a facilitative role in cultivating critical thinking; their pertinent questions challenged students to think further about intercultural issues. This contention is in contrast with Ware & Kramsch's (2005) assertion that "teachers are pivotal in helping students take an intercultural stance" (p. 203). Moreover, the fact that students were able to reach the advanced phases of cognitive presence on their own demonstrates that overt teacher facilitation is not necessary to support students' advanced cognitive learning (Shea, Hayes, & Vickers, 2010) and that instructors might consider spending more time preparing the asynchronous discussions rather than being active within them (Andresen, 2009). In terms of course design, our results bear out that a combination of factors such as the topic selection (e.g., controversial issues) and the clarity of the assessment criteria (O'Dowd, 2013), affected favorably students' engagement in the task.

The answer to our third question on the perceived learning outcomes of a task-based online forum, students' responses in the questionnaire and their comments in the reflective task confirmed that the online forum provided them with a cognitively challenging environment. They reported that discussing their selected topic helped them understand and also look at the topic from a new perspective. They also said how they were motivated to take initiatives to carry out additional work, either by undertaking some research on the topic or by reading other dyads' postings. Overall, students were actively "searching, inquiring and reflecting" to contribute to their unique discussions (Redmond, 2006, p. 49). They were in the midst of dialogic interactions (Helm, 2013).

6. Limitations and conclusion

The findings presented in this chapter are to be taken cautiously due to the relatively small number of participants and the context in which the asynchronous online communication took place (i.e., the participants were motivated university students with an intermediate to high level of French). Results should therefore be regarded as being only indicative of patterns of cognitive presence and engagement which might be found with other L2 learners working in a CMC environment. A replication of our study with a larger sample size and/or over a longer period (e.g., using ACMC throughout an academic year as some of our students have suggested in their feedback questionnaires) would certainly contribute to a better understanding of factors that affect participation and quality in online asynchronous discussions.

Besides, more research is needed to manipulate single variables (e.g., participants' cultural identity or level of motivation) because there could be a correlation between the degree of cognitive (and social) activity and the cultural identity of participants (whether they are native or nonnative speakers). In addition, the question of students' teaching presence, such as peers' expertise and peers' scaffolding, to generate and sustain cognitive activity of online discussions should also be addressed in later studies.

Nonetheless, the present study corroborates previous research on the added value of CMC on university students' intercultural and language development (O'Dowd, 2011). It underlines some affordances of an online discussion forum, namely, providing a challenging and real learning space for undergraduate students. It also lends further support to the need for CMC out of class activities in which students have the freedom to explore and build on each others' experience and expertise to develop their cognitive skills.

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Appendix A

Project outline

1. REGARDS SUR L'ACTUALITE/ 25%

Semaines 1 à 3 / *Travail individuel* / Recherche sur la presse, via Internet /5%

- Vous rechercherez plusieurs articles traitant d'un même sujet d'actualité et tirés de journaux/ magazines de différentes tendances -*Le Monde, Le Figaro, Libération, l'Express, la Croix, le Nouvel Observateur, etc.*, les lirez, et les référencerez.
- Vous sélectionnerez un seul de ces articles et l'analyserez -sous forme de commentaire- certaines prises de position du journaliste (2 au minimum/ 250 mots environ)

2. ECHANGES D'OPINION SUR L'ACTUALITE

Semaines 4 à 10 / *Travail en tandem avec un(e) francophone* /15%

Discussion en ligne sur SULIS | Une contribution par semaine par étudiant/e.

- Vous mettrez votre commentaire sur le forum de discussion
- Vous choisirez l'un des points controversés que vous aurez abordés pour en discuter avec votre correspondant(e) et, pour lancer la discussion, vous soumettrez une question qui sera postée sur le forum, à la suite de votre commentaire.
- Vous lirez les réactions -à vos affirmations- de votre partenaire.
- Vous défendrez vos arguments et en avancerez de nouveaux.

3. AUTRE PERSPECTIVE SUR L'ACTUALITE

Semaines 11 & 12 / *Travail individuel* /5%

Suite à vos interactions -en ligne- avec un(e) francophone, (1) vous expliquerez si et de quelle façon, votre regard/ perspective sur la question d'actualité étudiée, a changé (150 mots environ) et (2) vous évaluerez la valeur (ajoutée) de l'échange en ligne (150 mots environ).

Appendix B

Assessment criteria for online task

Grille d'évaluation - FORUM DE DISCUSSION sur SULIS -Étudiants Irlandais

N O M	Le suivi de la correspondance -Régularité des msges (2 pts) -Longueur des msges (2 pts)	La teneur de l'argumentation/ La valeur de l'interaction -Prise en compte du point de vue de l'Autre (2 pts) -Ouverture interculturelle (2 pts)	L'actualisation de la discussion Ajouts/Liens/ Ressources multimédia (2 pts)	La rédaction des messages -Le registre de langue (1 pt) -La syntaxe/ structure (2 pts) -Le choix de mots/franglais (2 pts)	15%
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Chapter 16

Orientations and Access to German-Speaking Communities in Virtual Environments

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Summary

Educational settings in which learners have a shared domain of interest may be viewed through the lens of *communities of practice* (e.g., Haneda, 2006; Kapucu, 2012), which are groups of individuals who participate in common activities and who create a shared identity through engagement in and contribution to that community (Wenger, McDermott, & Synder, 2002). Learning itself is “an evolving form of membership” through which newcomers (i.e., beginning-level students) may eventually become more central in their community (Lave & Wenger, 1991, p. 53). However, communities of practice are no longer limited to a local setting; in today’s digital age, communities may also be sustained through activities in virtual environments (Oguz, Marsh, & Landis, 2010). Yet prior studies have not examined the relationship between language learners’ orientation toward gaining membership in a target language community and the digital tools that they use to engage with that community beyond the classroom setting.

1. Review of the Literature

First, I provide an overview of *Communities*-oriented goals, as outlined by the American Council on the Teaching of Foreign Languages (ACTFL), and I report on previous research on learners’ interactions with target language communities via computer-mediated communication. Additionally, I describe research on the intersection of perceptions of target language communities and language learning and thereafter outline my research questions for the present study.

1.1 *Communities* in Foreign Language Education

For many language educators, the word “communities” evokes thoughts of ACTFL’s National Standards for Foreign Language Learning (henceforth, Standards; NSFLEP, 1996). These Standards, also known as the Five Cs—*Communication, Cultures, Connections, Comparisons*, and *Communities*—outline what students should know and be able to do with their target language. However, some schol-

ars have called *Communities* “the lost C” because it receives so little attention in research and curricula (Glisan, 2012, p. 518; Glisan, Phillips, Allen, Abbot, & Sauer, 2010). Specifically, the aim of the *Communities* Standard is for students to participate in multilingual communities at home and around the world (NSFLEP, 1996).

Magnan (2008) has questioned the hierarchical ordering of the Standards, especially in terms of the primacy of *Communication* over *Cultures* and *Communities*. She suggested that of the Five Cs, *Communities* should perhaps be the most fundamental because addressing the goals within *Communities* can elicit the aims of the other Standards. Additionally, Magnan stated that perceptions of target language communities can have a strong impact on students’ learning motivations and therefore should receive equal, if not more attention, as compared to the other Standards. Some language educators also believe that the *Communities* Standard is being neglected. In a survey of 2,134 instructors across nine different languages, teachers reported that *Communities* is the most difficult Standard to teach; they lack training and professional development to meet these goals, and engagement with target language communities is out of their control and not feasible (ACTFL, 2011). This was echoed by Willis Allen and Dupuy (2012, p. 486), who found that although participation in multilingual communities is seen as “the *raison d’être*” for foreign language learning, educators largely view this as an extracurricular experience.

Until Magnan, Murphy, Sahakyan, and Kim (2012) investigated how the Standards aligned with students’ goals and expectations for their own learning, it was unclear whether learners themselves noticed this gap in their foreign language education. Their research showed that for 1,467 students across 30 languages, learners’ goals did correspond to the Standards and they generally believed that they could achieve these goals. The goal area that was highly valued by most participants was *Communities*; however, this was also area with the biggest gap between the desire to achieve it and the belief that it would be achievable. In sum, students wanted to be able to engage with speakers of their target language but did not feel that they had opportunities to do so within the classroom setting.

1.2 Technology Use for Interaction with Target Language Communities

Research on addressing the Standards via digital technologies is not scarce, particularly when one searches for papers that address all Five Cs (e.g., Finger, 2001; McGee, 2001; Mills, 2011; Okubo & Kumahata, 2001; Ter Horst & Pearce, 2010; Walz, 1998). However, it remains true that *Communities* is the Standard that receives the least attention (ACTFL, 2011; Glisan, 2010, 2012; Magnan, 2008; Magnan et al., 2012). This is evidenced when we look at Phillips’ (1998) description on using technology to teach the Five Cs. *Communication* and *Cultures* each received more than a full page of recommendations, and *Connections* and *Comparisons* both had longer paragraphs (31 and 14 lines, respectively), whereas *Communities* had only an eight-line description. When it comes to studies that concentrated primarily on the *Communities* Standard and the use of technology, there has been a dearth of research.

One of the few studies to focus on interaction with target language communities via computer-mediated communication was an article from Abraham and Williams (2011), in which the authors proposed a pedagogical framework for the analysis of computer-mediated discourse in order to increase students' exposure to the variety of discourse options available in online communication environments. Through the analysis of excerpts from chat transcripts and a corpus of French and Spanish electronic discourse, they illustrated how a multiliteracies-based framework can promote the autonomous, lifelong participation and learning emphasized within the *Communities* Standard. A second example was a study from Darhower (2006), which analyzed chat-room communication during a 10-week collaboration between pairs of university-level learners of Spanish and English. This article demonstrated how learners can become integrated into a bilingual speech community, which may then subsume the remaining four Cs of the Standards. This study foreshadowed Magnan's (2008) later proposal that the *Communities* Standard should be placed higher in the hierarchy of the Five Cs. While these articles do prescribe recommendations for how *Communities*-oriented goals may be addressed as part of the curriculum via digital technologies, they do not describe the importance that learners place on these educational objectives and how their orientations toward target language communities may influence learning behaviors.

1.3 (Imagined) Cultures and Communities of Practice

Although classroom discussions tend to focus on generalizations and "facts" about language and culture (Webber, 1990, p. 132), language learning is influenced by individual accounts of and attitudes toward the community (Rubenfeld, Clement, Lussier, Lebrun, & Auger, 2006), and learners' orientations toward target language communities can have a strong impact on their identities and learning (Pavlenko & Norton, 2007). The concept of *imagined communities*—or socially constructed entities that are envisioned by people who perceive themselves to be a part of that group and who use a common language to foster a sense of unity and belonging (Anderson, 1983, 2006)—is often applied to language learning contexts in conjunction with Lave and Wenger's (1991) notion of *legitimate peripheral participation* (see also Wenger, 1998). Legitimate peripheral participation is the process by which newcomers interact with existing members of a target group to gradually move toward fuller participation and membership. However, participation does not guarantee assimilation: "To become a full member of a community of practice requires access to a wide range of ongoing activity, old-timers, and other members of the community; and to information, resources and opportunities for participation," (Lave & Wenger, 1991, p. 100).

Murphrey, Jin, and Li-Chi (2004) examined the intersection of imagined communities and legitimate peripheral participation through an analysis of students' autobiographies in courses on English as a Second Language. They found that students imagined communities in three different ways: (a) learners compared their experiences to past communities of practice to which they belonged, (b) they

were aware of current groups of speakers which they were a part of or could be a part of, and (c) they imagined future communities to which they aspired to belong. The authors concluded that it is important for students to develop perceptions of target language communities because learners will invest time and energy into becoming more like the members of the groups that they wish to join.

Based on previous studies, a 21st century communicative language course would seem to be an environment well suited for allowing learners to participate in and work toward a more central and engaged role in a target language community. Although students may not feel that *Communities*-oriented goals are addressed in their classes (Magnan et al., 2012), communities may also be established and maintained in virtual settings (Oguz, Marsh, & Landis, 2010). Yet there is a paucity of research on the relationship between language learners' orientations toward participation in a target language community and the digital tools that they use to engage with that community beyond the classroom setting. Therefore, I address the following research questions:

1. To what extent was engagement in a German-speaking community a goal for the beginner-level college students of German who participated in this study?
2. To what extent was orientation toward *Communities* related to technology-use behaviors for learning about or engaging with communities in the target language?

2. Methods

First I outline the instruments and data analysis methods that I used to address the research questions; then I describe the learners who took part in this study.

2.1 Instruments

The two data collection components for this study were a questionnaire and follow-up interviews. The questionnaire, which was completed during the fifth week of the semester, contained 387 Likert-scale and ranking items and 68 open-ended questions in total. Portions of the questionnaire that were used for this study are outlined in more detail below (see also <https://www.dropbox.com/sh/0lxw8oll53sb7kn/AAC06IGDa8PDqA1vZJdk9zdqa?dl=0>). Furthermore, six of the 23 volunteers participated in up to three biweekly follow-up interviews across the last eight weeks of the semester. The interview data are used in discussion of the results below.

2.1.1 Research question 1: goals for language learning. Research Question 1 addressed—but did not limit itself to—the *Communities*-oriented goals that are outlined by ACTFL (NSFLEP, 1996). I chose to include other potential objectives based on findings from a pilot study which showed that students' learning goals could not be fully captured via the eleven Standards alone. Furthermore, I chose not to include Standard 5.1 (“Students use the language both within and beyond the school setting”) as worded in NSFLEP because it addressed only indirectly

one important aspect of *Communities*, namely, *membership* in a target language community (Darhower, 2006; Magnan, 2008). Therefore, the *Communities* goal area in my study was comprised of seven individual goal items. One was ACTFL's *Communities* Standard 5.2 ("To become a life-long learner by using [German] for personal enjoyment and enrichment;" NSFLEP¹); the six newly authored items encompassed a broader concept of gaining membership in a German-speaking community and are shown in Table 2 below. Participants rated each of these goals (along with 22 other items) according to the following prompt, modeled after Magnan et al. (2012): "Indicate the percentages in increments of 10 (0, 10, 20, 30,...100%) that best express how much you would like for these things to happen (0% = do not care at all; 100% = would absolutely love for this to happen)." For Research Question 1, I compared mean scores for each of the *Communities*-oriented items to determine which goals this study's participants most wanted to achieve.

2.1.2 Research question 2: technology use behaviors. To answer Research Question 2, I first divided the 23 participants into approximate quintiles based on respondents' scores for their orientation toward the *Communities* goal area. Further analyses compared responses from participants in the top and bottom quintiles. The five students who composed the top quintile were designated the 'participants with a/the strong(est) orientation toward *Communities*;' the five students in the bottom quintile comprised the group called 'participants with a/the weak(est) orientation toward *Communities*.' In the final portion of the questionnaire, participants reported how frequently they engaged in 22 different types of technology use, with whom (if anyone) they used the technologies, the reasons they used the technologies, and the percentages of each type of technology use that occurred in English or German. I used this information to make comparisons for the technology-use behaviors of the groups with the strongest and weakest orientation toward *Communities*.

2.2 Participants

I recruited students from five intact first-semester German classes that were taught with a communicative approach at a large research university in the American Midwest. The 23 students who volunteered to participate were ages 18-25 (mean = 19.26, $SD = 1.91$) and included 13 female students and 10 male students. Sixteen of them were native speakers of English; five were native speakers of Chinese; one was a native speaker of Czech; and one participant said that she natively spoke English, Chinese, and Malay. Table 1 provides an overview of scores on the *Communities* goal area for the participants with the strongest and weakest orientations toward *Communities* and for the interviewees who had mid-range orientations toward the *Communities* goals.

Table 1

Composite Scores for Orientation Toward *Communities* from Interviewees and Participants with the Strongest and Weakest Orientations Toward the *Communities* Goal Area

Scores for participants with the strongest orientation toward <i>Communities</i> (<i>n</i> = 5)	Sample (<i>n</i> = 23) Mean score on <i>Communities</i> goal area = 66.73/100; <i>SD</i> = 27.43	Scores for participants with the weakest orientation toward <i>Communities</i> (<i>n</i> = 5)
Biyu - 100/100	Interviewees with mid-range <i>Communities</i> scores	Alex - 34.29/100
Sophie - 100/100		Gavin - 28.57/100
Ethan - 100/100	Julie - 82.86/100	Nate - 24.17/100
Lin - 97.14/100	Kathleen - 68.57/100	Maddie - 18.57/100
Arissa - 94.29/100	Marcus - 65.71/100	Jack - 7.14/100

Two participants with a strong orientation toward *Communities* participated in the follow-up interviews (Biyu and Arissa), as did one participant with a weak orientation (Nate); therefore, I later report on their technology-use behaviors in more detail.

3. Results

3.1 Research Question 1

To what extent was engagement in a German-speaking community a goal for the beginner-level college students of German who participated in this study?

To determine how strongly participants aligned themselves with each of the goals that were comprised under the *Communities* goal area in the present research instrument, I calculated means and standard deviations for individual participants' ratings that pertained to each of the seven *Communities* items (see Table 2). The goals are shown in order from highest to lowest mean score.

Table 2

Participants' Orientations Toward Individual *Communities* Goals (*n* = 23)

Goal	Mean	<i>SD</i>
To be able to communicate with native German-speaking friends or family	89.5/100	24.17
To become a life-long learner by using German for personal enjoyment and enrichment	73.91/100	29.35
To become a part of the German culture	72.61/100	35.45
To know about German speakers, German companies, or German cultural events in the [city] area	64.78/100	33.96
To know about German speakers who resemble me in some way (age, student status, interests, etc.)	63.26/100	36.23

To know about German speakers, German companies, or German cultural events in the US (other than [state])	53.04/100	35.98
To know about German speakers, German companies, or German cultural events in [state] (other than [city])	50.00/100	38.49

Note: In the student version of the questionnaire, the name of the city and state where the university is located were provided instead of [city] and [state].

Among the seven goals that comprised the *Communities* goal area, the ability to communicate with native German-speaking friends and family was the top priority; 15 out of 20 participants² rated this goal as one that they absolutely (100%) wanted to achieve by the end of their language studies. To test whether the ratings of any item under the *Communities* goal area was rated significantly different from each of the other *Communities*-oriented goals, I compared the means of paired *Communities* goal items via two-tailed *t* tests (all possible pairings are shown in Table 2b available at <https://www.dropbox.com/sh/0lwx8ol153sb7kn/AACO6IGDa8PDqA1vZJdk9zdqa?dl=0>). In the 27 pairings, statistically significant differences emerged in seven cases. The goal item with the greatest percentage of pairings that yielded differences (57.14%) was ‘to be able to communicate with native German-speaking friends or family,’ which had a significantly higher mean rating than each of the following items: ‘To know about German speakers, German companies, or German cultural events in the [city] area’ ($t = 2.71$; $p = 0.01$); ‘to know about German speakers who resemble me in some way (age, student status, interests, etc.)’ ($t = 2.75$; $p = 0.009$); ‘to know about German speakers, German companies, or German cultural events in the US (other than [state])’ ($t = 3.84$; $p = 0.0004$); and ‘to know about German speakers, German companies, or German cultural events in [state] (other than [city])’ ($t = 3.96$; $p = 0.0003$). When looking at natural breaks in mean scores, the goals that suggested that learners enter into direct contact with speakers of German or their culture were rated more favorably than the remaining four goals that all referenced knowledge of German speakers without a direct connection to those communities.

3.2 Research Question 2

To what extent was orientation toward Communities related to technology-use behaviors for learning about or engaging with communities in the target language?

I first report on findings that establish a baseline for participants’ overall technology use in their day-to-day lives and then elaborate on results specific to technology use in German.

3.2.1 Overview of technology use. Table 3 lists each use of technology in order of the highest to lowest number of participants in the sample who reported its use in any language and the percentage and number of participants who said that they used the technology in German, with their reports on the percentage of that use that occurred in German.

Table 3

Participants in the Sample ($n = 23$) Who Reported the Use of Each Technology in General and in German

Technology use	Percentage (and number) of participants who reported use of this technology in any language	Percentage (and number) of participants who reported use of this technology in German	Mean reported % of use in German	SD
Listening to music or watching music videos	100.00% (23)	34.78% (8)	8.50%	9.35
Reading e-mail	100.00% (23)	21.74% (5)	4.40%	3.72
Writing e-mail	100.00% (23)	17.39% (4)	5.25%	3.69
Watching movies	95.65% (22)	13.04% (3)	6.67%	2.89
Talking on the phone	91.30% (21)	4.35% (1)	1.00%	-
Posting to social media	86.96% (20)	17.39% (4)	4.50%	4.04
Searching for websites	86.96% (20)	13.04% (3)	6.67%	2.89
Reading social media	82.61% (19)	17.39% (4)	10.00%	7.07
Starting (text) chats	82.61% (19)	17.39% (4)	7.50%	2.89
Responding to (text) chats	82.61% (19)	13.04% (3)	6.67%	2.89
Video chatting	73.91% (17)	26.09% (6)	12.83%	18.65
Watching videos made by people you do not know personally	73.91% (17)	17.39% (4)	5.25%	3.69
Reading websites	73.91% (17)	4.35% (1)	5.00%	-
Reading blogs	60.87% (14)	4.35% (1)	5.00%	-
Playing video games	47.83% (11)	0.00% (0)	-	-
Reading chats or forums without participating	43.48% (10)	4.35% (1)	5.00%	-
Watching videos made by others you know personally	39.13% (9)	4.35% (1)	20.00%	-
Listening to talk radio or podcasts	30.43% (7)	4.35% (1)	5.00%	-
Writing blogs	26.09% (6)	0.00% (0)	-	-
Creating videos	13.04% (3)	0.00% (0)	-	-
Watching videos you made	4.35% (1)	0.00% (0)	-	-
Creating/addng to websites, forums, or wikis	4.35% (1)	0.00% (0)	-	-

Note: Only the participants who reported that they used the technology in German were considered in the calculations for the mean percentages of use that occurred in German (i.e., entries of 0% were not included).

According to their descriptions for the general purpose of these activities, talking on the phone, texting, and synchronous video and text-based chatting were all common ways that these participants stayed in touch with their family members and friends, while reading and writing e-mails were used more in educational contexts.

The participants with the strongest orientation toward *Communities* reported that they engaged in an average of 16 of the listed technology uses in any language ($SD = 2.74$). Participants with the weakest orientation toward *Communities* reported an average of 12.8 technology uses ($SD = 2.86$). These differences were not statistically significant at $p < 0.05$ in a two-tailed t test of independent means ($t = 1.81$; $p = 0.11$). Therefore, I treat these two groups as though their baseline technology use in any language was the same.

3.2.2 Technology use with German-speaking contacts in German. Thirteen out of the participants (56.52%) in the sample reported that they used German via technology outside of class³. As shown in Table 3, the activities that at least one-fourth of participants in the sample reported that they did in German were listening to music or watching music videos (34.78%) and video chatting (26.09%). Additionally, 21.74% of the participants reported that they read e-mails in the target language, which were mainly written by their current instructors in their German courses. Furthermore, 43.48% of the participants (including two participants with a strong orientation toward *Communities* and two participants with a weak orientation toward *Communities*) reported that they spoke German with others face-to-face beyond the classroom setting. The mean reported percentage of face-to-face interaction that occurred in German as reported by those 10 participants was 6% ($SD = 2.94$). They mentioned various types of contacts (e.g., friends and family members [i.e., personal contacts]; or teachers, classmates, and coaches [i.e., educational contacts]) and various kinds of contexts (e.g., pleasure or homework).

The three technologies for which the mean reported percentage of use in German was the highest were watching videos made by others they knew personally (20%, as reported by one participant), video chatting (mean = 12.83%, $SD = 18.649$), reading social media (mean = 10%, $SD = 7.071$), and listening to music or watching music videos (mean = 8.5%, $SD = 9.354$). The majority of these activities were receptive in nature. All six participants who reported that they video chatted in German said they did so to maintain existing relationships with their friends, significant others, and family members.

Table 4 shows the percentage and number of the participants in the sample who reported the use of each technology in German with either personal or educational contacts and the mean reported percentage of each technology use. The technologies are listed in order from highest to lowest number of participants who reported their use.

Table 4

Percentage and Number of Participants in the Sample ($n = 23$) Who Reported Use of Each Technology in German by Contact Type

	Personal contacts			Educational contacts		
	Percentage (and number) of participants who reported use of the technology in German	Mean % of use	SD	Percentage (and number) of participants who reported use of the technology in German	Mean % of use	SD
Video chatting	26.09% (6)	12.83%	18.65	0.00% (0)	-	-
Starting (text) chats	17.39% (4)	7.50%	2.89	0.00% (0)	-	-
Reading e-mail	13.04% (3)	5.33%	4.51	8.70% (2)	5.50%	6.36
Writing e-mail	13.04% (3)	5.33%	4.51	8.70% (2)	5.50%	6.36
Watching movies	13.04% (3)	6.67%	2.89	4.35% (1)	5.00%	-
Listening to music or watching music videos	13.04% (3)	2.33%	2.31	4.35% (1)	1.00%	-
Watching videos made by unknown others	13.04% (3)	5.33%	4.51	0.00% (0)	-	-
Responding to (text) chats	8.70% (2)	7.50%	3.54	0.00% (0)	-	-
Posting to social media	8.70% (2)	7.50%	3.54	0.00% (0)	-	-
Talking on the phone	8.70% (2)	2.50%	2.12	0.00% (0)	-	-
Reading social media	4.35% (1)	10.00%	-	0.00% (0)	-	-
Listening to talk radio or podcasts	4.35% (1)	5.00%	-	0.00% (0)	-	-
Searching for websites	0.00% (0)	-	-	4.35% (1)	10.00%	-

With personal contacts, the technologies with the highest mean reported use were video chatting (mean = 12.83%, $SD = 18.649$) and reading social media (10%, as reported by one participant). Starting and responding to text chats and posting to social media all had means of 7.5% of reported use, which indicates that the technologies that these students were most inclined to use in their personal lives involved communication. The only technology for which the mean reported percentage of use with educational contacts was at least 10% was searching for websites (as reported by one participant). All of the learners who reported technology use with their educational contacts outside of class said that it was for

their coursework, rather than for pleasure. No participants reported that they used technology in German with any other contact types (e.g., business contacts).

Table 5 lists the technologies that the participants with the strongest and weakest orientations toward *Communities* reported using. The table shows the percentage of the participants in each group who reported use of each technology and the differences in the percentages of participants. The table is organized to first show the differences that were in favor of the participants with the strongest orientation toward *Communities* and then the differences that were in favor of the participants with the weakest orientation toward *Communities*.

Table 5
Percentages of Participants Who Reported the Use of Each Technology in German

	Percentage of participants with a strong orientation toward <i>Communities</i> (n = 5) who reported its use	Percentage of participants with a weak orientation toward <i>Communities</i> (n = 5) who reported its use	Difference in percentage of participants with strong and weak orientations toward <i>Communities</i>
Technology uses that were reported by more participants with a strong orientation toward <i>Communities</i>			
Listening to music or watching music videos	60%	20%	40%
Watching videos made by others you do not know personally	40%	0%	40%
Video chatting	40%	0%	40%
Reading e-mails	40%	20%	20%
Searching for websites	20%	0%	20%
Posting to social media	20%	0%	20%
Technology uses that were reported by more participants with a weak orientation toward <i>Communities</i>			
Writing e-mails	0%	20%	20%
Watching movies	0%	20%	20%

There were six technologies for which a greater proportion of participants with a strong orientation toward *Communities* reported use in German as compared with the participants with a weak orientation. Some of these technologies contained a receptive video component, and several also exhibited aspects of interaction with speakers of the target language (e.g., reading e-mails, posting to social media, and video chatting). There were only two technologies for which a greater proportion of the participants with a weak orientation reported using. Despite these eight technologies for which the reported number of users from each of the two groups with the strongest and weakest orientation toward *Communities* diverged, there were nine technology uses that were reported equally by these two groups. All nine were technologies that participants in the sample reported using in German but were not reported by any of the participants with the strongest or

weakest orientation toward *Communities*. These were reading blogs, starting or responding to text chats, reading chats or forums without participating, reading social media, reading other websites, watching videos made by others one knows personally, listening to talk radio or podcasts, and talking on the phone.

Table 6 shows the technologies that participants with the strongest orientation toward *Communities* said that they used in German with different contact types and the reported percentage of their use in parentheses.

Table 6

Technology Use in German with Different Contact Types as Reported by Participants with a Strong Orientation toward *Communities* ($n = 5$)

	Biyu	Sophie	Ethan	Lin	Arissa
Personal contacts	[None]	-Watching videos made by others you do not know personally (5%) -Talking on the phone (1%) -Video chatting (1%)	-Reading social media (10%) -Video chatting (10%)	[None]	-Watching videos made by others you do not know personally (1%) -Listening to music or watching music videos (1%)
Educational contacts	[None]	[None]	[None]	[None]	-Listening to music or watching music videos (1%)

Of these five participants, three reported that they used technology outside of class with their personal contacts. For Arissa, these uses were receptive, and only a small percentage (1%) of the use reportedly occurred in German. She was also the only participant with a strong orientation toward *Communities* who reported that she used technology in German outside of class with her educational contacts; this was again a receptive use of technology which she used for her coursework, and for which only 1% of the overall use was reportedly in German. Biyu did not report that she used technology to interact with others in German.

Table 7 shows the technologies that participants with the weakest orientation toward *Communities* reported that they used in German with different contact types, with the reported percentage of use that occurred in German in parentheses.

Table 7

Technology Use in German with Different Contact Types as Reported by Participants with a Weak Orientation toward *Communities* ($n = 5$)

	Alex	Gavin	Nate	Maddie	Zach
Personal contacts	-Watching movies (5%)	[None]	-Reading e-mail (1%) -Writing e-mail (1%) -Listening to music or watching music videos (1%)	[None]	[None]
Educational contacts	-Watching movies (5%)	[None]	-Reading e-mail (1%) -Writing e-mail (1%)	[None]	[None]

Only two of the five participants with a weak orientation toward *Communities* said that they used technologies in German outside of class. Nate reported that he read and wrote e-mails with both personal and educational contacts and that 1%

of that activity was in German. Additionally, he said that he listened to music or watched music videos with his friends and that 1% of that music was in German.

In sum, more participants with a strong orientation toward German-speaking communities (60%) reported that they engaged in technology use in German outside of the classroom than participants with a weak orientation toward *Communities* (40%). Participants with a strong orientation toward *Communities* also cited the use of a wider variety of technologies in German. However, the amount of communication in German was little to none for participants in both groups, except in Ethan's case (who had a strong orientation toward *Communities*). For most participants, the use of digital tools in German was primarily for learning about the language and its speakers rather than for engaging with them. Additionally, when they described the purpose of their interactive technology use in German, all participants said that they were completing course projects or maintaining existing relationships with speakers of German rather than seeking or establishing new relationships with members of the target language community.

4. Discussion

In this discussion, I use qualitative data to support and elaborate on the results. Thereafter, I describe the limitations of this study.

4.1 Qualitative Support from Interviews

Some students in this study did place a high value on engaging with target language communities; however, even the students with the strongest orientation toward German-speaking communities made little use of the target language to engage with those communities in virtual environments. Interview data support these findings and shed light on students' perceptions of the importance of *Communities* and how they describe the potential role of digital technologies for engaging with those communities.

4.1.1 Importance of target language communities. Discussions with the six interviewees provide support that the questionnaire items designed to measure community orientation did capture students' desire to gain membership in a German-speaking community. The two interviewees with the highest score on the *Communities* goal area were Biyu and Arissa—both of whom described a strong desire to integrate with German speakers. Biyu imagined the type of experience she hoped to have when she said "I wanna experience homestay someday. 'Cause that's how you actually get involved into a culture. To live with some family that is really German. And they live typical German life. That's how you get involved into a typical culture." When Biyu was asked if it was her goal to try and be more like a German, she elaborated, "sometimes. 'Cause I wanna go to Germany to spend some time, for like a year or two, and study there. So that's ... you stay in Germany, and you'd be a German if that happens." In another segment of the interviews, the interviewer described the Standards to the participants and directly asked their opinions on them. Arissa explained that she placed the highest value on *Communication* and *Communities* because she saw an interconnectedness between a language and its speakers.

The two interviewees who had middle-range scores for orientation toward *Communities* demonstrated mixed views about the importance of engaging with German speakers. Kathleen agreed more with Arissa and Biyu when she said:

I would really like to be able, at some point in time, to integrate myself in a German-speaking community. That just seems like something that would be very beneficial and just fun to do. So I think that [goal area] is the most intriguing for me, but I think to be able to do that, *Communication* and *Culture[s]*, or understanding culture, are the biggest for a good foundation.

Kathleen believed that an understanding of the language and culture were the most necessary skills to complete the more exciting goal of engaging with German speakers. Marcus, however, saw it differently:

Probably *Communities* is the least [important goal area]. But that's just because the original reason I started it was to be able to actually learn the language and speak it, so ... But then there's also all these other things that tie in, and so the *Cultures* one also helps you learn all that other stuff like the background of it. And the other stuff, it is important, but it's not as necessary for learning. Like if you're just learning it to be able to speak it, you know? It's not as necessary.

For him, engaging with speakers of the target language was more of a fringe benefit, rather than a goal in and of itself.

Nate was the interviewee with the weakest orientation toward *Communities*. When asked about his objectives for taking German, he said, “Probably *Communities* [is the least important goal area to me], because I don’t really anticipate ever living in a primarily German community.” Nate, like many educators in ACTFL’s (2011) Standards survey, saw physical distance as a barrier and did not acknowledge the possibility of engaging with target language communities in virtual environments.

4.1.2 Technology for accessing target language communities. All of the interviewees described ways in which the internet and digital technologies could be used for language learning, but few described ways in which those resources could be used to interact with speakers of the target language. Biyu, who had done much of her learning about American society and English online, believed that it could be valuable to expose oneself to German music and television via the internet. When asked what she might learn from those resources, she explained, “Cultural stuff. I think you practice also listening, in a way, and there are always subtitles. Sometimes I’ll grab some vocabulary and verbs, and learn how to make a sentences. And I’ll try to be like a German.” Although she described the ways she could learn about language and culture, she did not express that she used the internet to establish or maintain connections with other German speakers.

Marcus, who had a middling orientation toward *Communities*, was the only participant who brought up the possibility of meeting or getting to know German speakers in virtual settings. He said:

I think it'd be cool to maybe get a penpal that's in Germany, or somebody who speaks German, and then you can talk to them online. Or like another classroom that's in Germany that's learning English. Or something like that, where you can talk to them... Yeah, exchange info, kind of learn more. You know, there's the full culture, but then there's also the individual cultures of people.

He also acknowledged the fact that this was an opportunity that had only recently become available. He explained:

You can connect with communities online. So it's easier to talk with people in a chatroom or something like that, and there's Facebook and stuff. But I mean, 20 years ago, it's not like you can connect to German speakers via just opening a textbook or something. Really, the only community you had was within your own classroom and whatnot, maybe other classes within the subject matter in the school. But other than that, you don't really have access to what we have now, in relation to the worldview you can get, and actually connecting with them.

However, Marcus did not actually take steps to connect with German speakers outside of the classroom; he simply acknowledged the possibility to do so.

In sum, although several of the participants placed a high value on participating in a German-speaking community, even the participants with the strongest orientation toward *Communities* did not attempt to establish contact with speakers of the target language in virtual settings. Only one of the six interviewees even mentioned the possibility that one could interact with other German speakers online; none of the others imagined gaining membership in German-speaking communities through virtual environments.

4.2 Limitations

Although this study sheds light on the reasons and the ways learners' orientations toward German-speaking communities may and may not shape their technology use behaviors for engaging with those communities in the target language, there were some limitations. First, data were collected at only one institution with a small group of students who were pursuing the same target language; the results are therefore exploratory and are not generalizable to other populations. Furthermore, these findings are based on self-reported data rather than actual observations of technology use behaviors, and participants may not have wholly or accurately represented their use of various resources. It is also possible that participants did indeed interact with target language communities, but used English or another language to do so; this study does not account for this type of engagement. It is likely that if this research was conducted with advanced learners, there would be more use of German for engaging with target language communities. Lastly, although this study addressed the percentage of use that reportedly occurred in German, it did not weigh the frequency of use to determine how often students used the target language to engage with German-speaking communities. More research

in this vein that mitigates these limitations would enhance our understanding of the relationship between orientations toward target language communities and technology use behaviors for accessing those communities.

5. Conclusions

Participants in this study placed varying degrees of importance on *Communities*-oriented goals, but trends showed that they hoped to be able to interact with speakers of German. Several learners described ways that digital tools could be used to learn about German speakers and their cultures, but few acknowledged the potential role of virtual environments for establishing contact with those speakers. In other words, they did not have access to the tools, activities, and experienced people in the community that would be necessary to gain membership in that community.

Those participants who did use the internet and digital resources to communicate in German with their personal contacts all noted that they were interacting with German speakers whom they already knew from face-to-face settings; none of the 23 participants had attempted to access or gain membership in a German-speaking community online. This, along with students' relatively strong orientation toward gaining membership in a German-speaking community, the fact that *Communities*-oriented goals are not being addressed in classes (ACTFL, 2011; Magnan et al., 2012; Willis Allen & Dupuy, 2012), and the fact that some students also do not have German-speaking contacts beyond the classroom setting demonstrates that the onus is on language educators to expose students to activities and resources that will allow them to meet *Communities*-oriented goals both within and beyond the classroom setting. In turn, learners may also invest more time and energy into shaping their identities as German speakers (Murphey et al., 2004), and, in time, we may be able to rediscover the "lost C".

Notes

¹ These Standards were updated in 2013, after data collection for this study had already been completed. They now read "Standard 5.1: Learners use the language both within and beyond the classroom to interact and collaborate in their community and the globalized world" and "Standard 5.2: Learners set goals and reflect on their progress in using languages for enjoyment, enrichment, and enhancement" (Redmond, 2014, p. 7).

² All 23 participants completed this portion of the questionnaire; however three participants wrote "N/A" or "not applicable" on the item "to be able to communicate with native German-speaking friends or family." Although I cannot be sure why this is, I presume it is because they did not have any German-speaking friends or family, so they felt the question did not apply to them.

³ All students used an online workbook for homework assignments. However, I did not consider this to be "outside of class," even though it was done at home.

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Chapter 17

Language Students' Personal Learning Environments Through an Activity Theory Lens

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Summary

This chapter illustrates a learner-centric approach to investigating the potential of online resources for language learning. In contrast to studies that look at the use of particular applications, tools, or social media platforms in formal educational contexts, this approach takes into account the totality of the personal learning environments learners create for themselves, intentionally and unintentionally, which may include online vocabulary-training applications, connection with native speakers of the target language through social media, immediate and free access to cultural products such as films, music, and the press, and increasingly ubiquitous machine translation. Using an activity-theory framework and questionnaire data, the empirical portion of this chapter illustrates some aspects of the personal learning environments of adults studying a foreign language at the beginner level and draws the following conclusions: (a) exploring the applicability of technologies for language learning can be done bottom up rather than top down; (b) digital tools do not replace nondigital tools, they complement them; (c) the digital native/digital immigrant distinction (Prensky, 2001; Benini & Murray, 2014) is questionable; (d) learner objectives do not always correspond to curricular objectives; and (e) the lines between language *learning* and language *use* can be blurred, and this is enabled in part by technology.

1. Introduction

Several years ago, I was given the task of creating a list of online resources for learning English for my department's website. The list was supposed to be partly for the benefit of our students and partly a resource for the community around our learning institution. The task fell to me because I was one of the more technologically inclined teachers in the department, and it sounded simple, but it was not. I was familiar with *some* of the existing online ESL and EFL resources from searching for examples and exercises for my students, but I did not feel that I had any particular expertise in finding the best ones. *Anyone* could do what I was going to do, which was a Google search. What was going to be special about my list?

I experienced a similar uncertainty when starting to research technology and language learning. I was not at all sure what technologies I should choose to focus on or how I would justify those choices. My exploration of previous research often left me wondering the same thing: how and why did the authors choose just these tools out of the sea of possibilities? It also seemed to me that there was a need for more studies that acknowledged the agency of students/learners, taking into account their own goals for language learning and their own abilities to find technologies to assist them in achieving those goals. It occurred to me that taking a bottom-up approach and asking the students about their technology use, instead of asking them what they thought about my technology choices, might be a way of circumventing the question of how to justify a focus on a particular technology.

My own experiences of learning several languages over the course of the past 25 years have underscored for me that the evolution of the internet has made self-directed learning significantly more convenient than it used to be, that making and maintaining connections with fluent speakers of the target language is easier than it once was, and that tools like online machine translators and spelling and grammar checkers make it significantly easier to produce L2 texts that I am willing to share with others. Yet, despite these improved opportunities for learning on my own, I find that I still appreciate the structure and feedback I get from formal language courses.

For these reasons, I have chosen an approach to research that takes a broad view of both the objectives and tools for language learning and includes both institutional and self-directed learning practices. The purpose of this chapter is: (a) to illustrate some of the objectives that adult students of foreign languages have and highlight some of the tools that they use in their studies; (b) to illustrate some of the ways that the technological developments of recent years empower learners to make use of the target languages in real-life situations, even as beginners; and (c) to explore an activity-theoretical paradigm for understanding the personal learning environments of language students that normalizes the use of digital technology and does not isolate it from the other tools and communities that language learners use. Furthermore, it is hoped that the framework will remain relevant even as the evolution of technology and our use of it continues to accelerate.

The findings from the empirical study raise an interesting set of questions about the role of formal language studies in a world of easily accessed resources for self-directed learning. These questions are taken up in the discussion section and are, I hope, of relevance both to researchers of computer-assisted language learning (CALL) and to language teachers trying to decide how best to help groups of learners who have disparate extracurricular experiences with both the target language and the use of digital technology. As Smith (2012) puts it, “there is clearly an opportunity for new research that informs theory and practice by investigating whether and how undergraduate learners see value in emerging technologies within their own diverse learning contexts” (p. 14).

2. Background

A systematic review of the CALICO monograph series over the last decade shows that the primary focus of the series has been on technology in institutional contexts. The majority of the 117 studies published in the series between 2006 and 2014 examined the use of technology in the classroom in some way. One of the exceptions was Williams, Abraham, and Bostelmann (2014), which examined students' attitudes toward technology outside the classroom. They found that while students use a wide variety of technologies in their extracurricular lives, the extent to which the students thought these kinds of technologies could be applied to their language learning was somewhat limited. Such sentiments are echoed in Tanaka (2010), Huff (2010), Román-Mendoza (2009), Benini & Murray (2014), and Reinhardt, Warner, and Lange (2014). While focusing on institutional contexts of their own empirical material, Sykes and Holden (2011) and Lord and Lomicka (2011) called for future research focusing on students' objectives and their personal relationships to technology. Robin (2011) and Reinhardt and Thorne (2011), citing Warschauer (2005), have also suggested that extracurricular CALL may be of greater interest than the technology imposed on less-than-enthusiastic students in the classroom.

Because the use of technology is becoming increasingly ubiquitous, a number of researchers have called for the 'normalization' of CALL (see Egbert, 2006; Chambers & Bax, 2006; Kern, 2006; Bax, 2008). While some have taken this to mean an as-yet-unachieved state in which all classrooms are fully wired and all teachers highly tech savvy (see Arnold & Ducale, 2011; Levy, 2013), I understand the original call for normalization as applying to the research paradigm, not the state of affairs in classrooms; that is to say that normalization means that it may no longer make sense to have a separate research community for CALL because computers are increasingly interwoven into the fabric of our everyday lives, and therefore any research on language learning is naturally going to be CALL research. The framework described in section 3 below can be seen as part of the movement to normalize CALL; that is, to view digital technologies as just some of the many tools in a learner's "tool kit" (Wertsch, 1991, p. 92).

Although tools have always existed for self-directed learning (e.g., books, correspondence courses, and pen-pals), research on language learner autonomy in the pre-internet age (see Holec, 1979; Little, 1991) offered reassurance to teachers that they would not become completely obsolete because they would be needed to help provide contact with the target-language community and authentic language materials. Sockett and Toffoli (2012), however, have called this into question. Because of the internet, "language use and implicit learning are already taking place through everyday communicative activities in virtual communities" (p. 140). They point out that authentic language materials are easily available to learners without the help of a teacher, and synchronous and semi-synchronous communication with other speakers of the target language has become easy and inexpensive. Students may have widely varying backgrounds when it comes to the kind of

experiences and contacts they have in the contact language, even at similar levels of proficiency. Further, Sockett and Toffoli ask:

Do stable contacts with [the target language] persist over a long period, allowing these students to be correctly described as [language] users (and not just “learners”)? Can these [language] users be seen to be functioning in virtual communities? And what interactions between components in their complex personal learning environments emerge from this language use? (p. 141)

In the following section, I explore the concept of the personal learning environment. In the empirical section, I present the results of a study that is the first stage of a longitudinal project which examines what contemporary learners are capable of and what the role of formal education is in a context where more and more people have potential tools for language learning always at their fingertips.

3. An Activity-Theoretical Framework for Personal Learning Environments

According to Buchem, Attwell, and Torres (2011), the term ‘personal learning environment’ (PLE) was first established in 2001 by Olivier and Liber, who defined the PLE as a “consistent user interface” that meets “lifelong learners’ needs ... for a learning profile of their own necessary for (co-)managing their learning career” and “to be able to carry on learning while temporarily disconnected from a remote learning server” (p. 1). In other words, they viewed the PLE as a particular digital platform which would serve both as a portfolio and a learning portal. Since that time, the PLE has been defined in a number of different ways by different researchers, but Buchem et al. identify two main types of definitions: the technocentric, which sees the PLE as an application or constellation of digital tools, and the pedagogical, which focuses on the technical skill set learners need to develop in order to make use of the tools at their disposal.

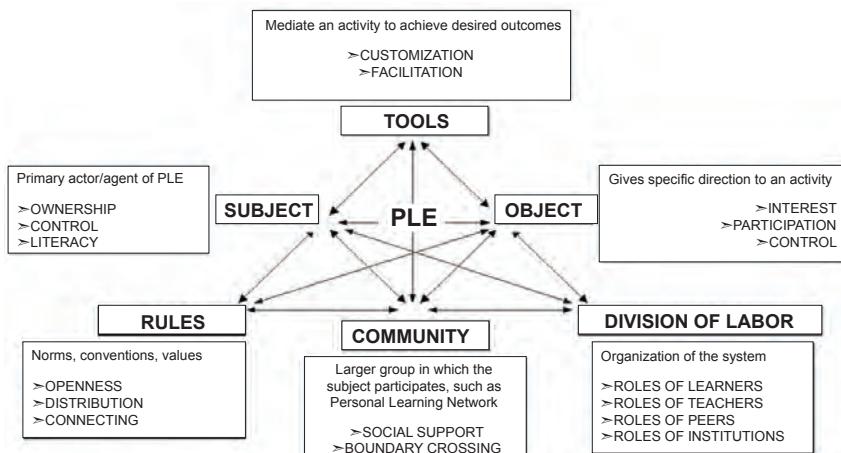
One example of a technocentric use of the PLE concept in a language learning context is a study conducted by Ullrich, Shen, and Gillet (2010), who created an interface with a variety of language-learning tools for students of French at Shanghai Jiao Tong University Continuing Education School. The single web page included widgets for Google Translate, spell checking, a text-to-speech synthesizer, voice recording and playback, a podcast in French, articles from a French learning site, and a place for students to bookmark their own resources, as well as links to exercises for training specific skills. They found that while students “like[d] the idea of having tools and exercises in one system,” they faced technical difficulties such as internet connection problems, issues with the usability of the interface, and limits on the system’s ability to collect data and integrate it between the different widgets. Furthermore, they found that the interface itself had a learning curve, that the time spent learning to use it detracted from time that could have been spent on the actual subject matter, and that certain assignments were constructed around the use of the PLE more for the sake of the PLE than because the assignment would help students reach the course’s learning objectives (similar to implementation issues noted by Kuriscak & Luke, 2009; Tanaka, 2010; Reinhardt et al., 2014). They concluded that the tools offered were too different from the

digital tools that the students make use of in their everyday lives and the assignments too abstract for students to see the utility of the PLE and to want to use it. This example is a good illustration of why it is important to take a pedagogical view and a bottom-up approach to researching language learners' PLEs.

A pedagogical definition of the PLE can be found in Attwell (2007), where the PLE is not a set of applications to be developed and implemented in formal learning situations, but instead is "comprised of all the different tools we use in our everyday life for learning" (p. 4). Attwell collaborated with Buchem et al. (2011) to place this definition in an activity-theoretical framework based on Engeström's (1987) illustration of an activity system (see Figure 1).

Figure 1

The PLE as an activity system (Buchem et al., 2011)



In this view, the PLE is not at all a collection of applications, but a complete activity system that includes the subject, object, and mediating tools proposed by Vygotsky (1978; 1930) as well as the *rules*—the “norms, conventions and values” that “represent a way of minimising conflicts in an activity system” and “affect how the subjects move towards the object and how they interact within a community,” the *community*, “a larger group including the subject” where “learning is situated” and participants “share the same objects, are governed by rules and divide tasks;” and the *division of labor*, which “is related to the organization of the community,” “comprises roles, tasks and power relationships in an activity system” and “mediates between the objects and the community” (Buchem et al., p. 8).

It can be said, then, that the PLE, although coined as a concept only at the beginning of the 21st century, is a way of looking at learning that can apply to any learner at any time. The ‘tools’ in question do not have to be digital tools. They can, as in Vygotsky’s (1978; 1930) view, be mental tools, or they can be old-fashioned physical artifacts like books, pencils, or stone tablets. In that sense, the developments in digital technology that have taken place in recent decades have

not changed the structure of learning environments as viewed through this framework. What has changed is the repertoire of tools available and the kinds of communities to which we have access and how we connect to them. The framework developed by Buchem, et al. (2001) is not limited to a particular subject area, but I argue that it is particularly useful for examining the PLEs of language learners. Activity theory has been used by a number of CALL researchers (e.g. Lantolf, 2000; Donato, 2000; Arnold & Ducate, 2011; Oskoz & Elola, 2012; Martínez-Alvarez & Bannan, 2013), and is a useful way of visualizing a PLE that involves both formal and informal learning and both digital and nondigital tools.

4. Methodology and the Activity-Theory/PLE Framework

What means can be used to study the PLE as an activity system? Generally speaking, activity-theoretical studies rely on observations of activities. As Lantolf (2000, pp. 7-8) points out, the unit of analysis in activity theory is “tool-mediated goal-directed action” (see also Zinchenko, 1995; Wertsch & Sammarco, 1985). However, when the activity in question consists of a person sitting in front of a computer, staring at a screen, and clicking a mouse, there are limits to what can be learned through traditional means of direct observation. There are a number of ways of collecting data about and analyzing language learning activities which are mediated through screens and keyboards, including:

1. analyzing discussions among students while in the process of using technology in coursework, whether in the classroom or in online chat forums (e.g. Martínez-Alvarez & Bannan, 2013; Pardo-Ballester & Rodríguez, 2013);
2. analyzing texts produced by participants in technology-mediated environments, such as student essays (e.g. Wildner-Bassett, 2008; Oskoz & Elola, 2012);
3. using eye-tracking technology and/or software that logs computer activity to assess the time participants spend on different activities and in different applications (e.g. Kuhn, 2012; Mutta, Pelttari, Salmi, Chevalier, & Johansson, 2014); and
4. asking the participants to describe their activities and the significance that those activities hold for them through questionnaires, interviews, focus groups, and diaries (e.g. Tanaka, 2010; Cotos, 2012).

Each of these approaches is associated with a different epistemological stance, and each has its own set of advantages and limitations. They are best combined in order to arrive at a reliable result through triangulation, that is, the use of multiple methods for data collection and analysis on the same object of inquiry (Denzin, 1970).

The empirical study described below is the first stage in a longitudinal project that is intended to combine several of the approaches above. Data collection in this first stage was done through a questionnaire. There are challenges to the reliability of data collected by questionnaires and all types of data that are self-reported by research subjects rather than observed (Miller, 1986). Despite these

limitations, questionnaires do provide access to some kinds of knowledge: they are a way to reach a large number of people at once and gain access to data which is related, if imperfectly and indirectly, to what people think, believe, and value, which is essential to explaining a subject's objectives in an activity-theory framework.

5. Empirical Study

5.1 Data Collection and Analysis

The learners whose perspectives were sought for this study were students enrolled in a beginner-level foreign language course at a regional Swedish university college, hereafter referred to as RSU or the university, in the 2013-2014 academic year. Beginner-level students were chosen in order to be able to establish a basis from which to follow the development of PLEs over time in future studies, as well as to understand the motivations that learners have for taking up the study of a new language. The decision to limit the study to students at a particular university was done primarily for practical reasons but also provides for a common context that can be used as the basis for describing the tools, community, and rules of the activity system.

The questionnaire was piloted in 2012 and 2013 among the RSU students who were registered for beginner-level language courses in those academic years. Based on the results of the pilot questionnaires, the questionnaire sent in 2014 was adjusted for clarity. Although the piloted questionnaires contained primarily open-ended questions, the results indicated that the responses to many of the questions fell into clear categories and that offering multiple-choice options reduced misinterpretation. For that reason, the final version of the questionnaire offered more multiple-choice questions than the pilot versions, though respondents always had the option to write in answers as well.

An invitation to take the questionnaire was sent out via e-mail in early March 2014 to all students enrolled in beginner-level language courses at RSU. Both the e-mail and the questionnaire were in both Swedish and English. The English version of the questionnaire received 41 responses and the Swedish version 135 responses, for a total of 176 responses. The answers to the Swedish and English versions of the questionnaires have been combined and any free-text answers written in Swedish have been translated by the author.

PLEs, as conceptualized in this study, are as personal as the name implies, which is to say that they are different for each individual. It is not possible to generalize about the PLEs of all language learners, and not particularly useful to conduct a solely quantitative analysis in order to generate an archetypal or average PLE. Instead, the analysis of the results is intended to illustrate possibilities. The data is interpreted through a combination of descriptive statistics and thematic analysis. In section 5 below, the results of the questionnaire are presented according to four of the six aspects of the activity system framework, starting with the rules, which give the context of the study, and the subjects. In accordance with the aims of the study, the primary focus of the study is on the tools, or tool-mediated

activities, and the respondents' objectives. The community and division of labor aspects of the framework are extrapolated from rather than directly evidenced by the questionnaire data, and are taken up in the discussion section.

5.2 Results

5.2.1 Rules. In the 2013-2014 academic year, RSU offered beginner-level courses in Arabic, Chinese (Mandarin), French, German, Italian, Japanese, Portuguese, Russian, and Swedish.¹ All of these courses were offered only by distance in 2013-2014, with the exception of Swedish, which had both campus and distance options. Distance courses at RSU have regular, real-time (synchronous) seminars with multiple modes of interaction: video, through web cameras; voice, through headsets; and text, through chat boxes, as well as other multimedia channels, through the 'whiteboard,' where students and teachers can, for example, upload documents, share their computer screens, and show video. The only significant difference in course structure (e.g., assignments, number of seminars, etc.) between the campus and distance courses in the language department is where the seminars take place; the distance seminars occur online using a video-conferencing platform (Adobe Connect).

The language courses at RSU are offered at a variety of different study paces, and many of the courses offer evening seminars, making it possible to study in parallel with other responsibilities, such as full-time work. Most of the language courses at RSU are flexible with regard to the language of instruction or support language, meaning that in addition to the target language, course instructions and teaching may be in English or Swedish, depending on the preferences of the students and teachers in a given course. This flexibility allows for students who do not speak Swedish to participate in the courses. Students who are legal residents of EEC member countries do not pay tuition fees at Swedish universities,² so some students enrolled in these courses have no other connection to the university or to Sweden.

In the responses to the question "why did you choose [RSU] as the place to study this language?" (open answer), 15 categories emerged. A number of the respondents said that the university was unique in some way: that it was one of few universities where distance options were available, where the language in question was available to them, or where beginner-level courses were available. In many cases respondents wrote "It was the only university that has this course", which was categorized as *course availability*. Some simply said that the course "looked good" in some unspecified way; this was categorized as *course suitability*. Many respondents said that they were current or former students of the university in another subject and it was therefore natural for them to choose RSU for their language studies. Others mentioned the timing (i.e., day/evening seminars) or pacing of the course, the range of courses available in the given language, the opportunities for progression in the language or toward a university degree, and the university's good infrastructure and/or platforms for distance studies. Less common answers were that the university was prominent when they searched for

language courses on the internet (categorized as *web presence*), that the courses were tuition-free for EEC residents, or that they chose the university simply by chance. Two students mentioned that they were familiar with the university because they live in the region where it is located, and one mentioned a positive interaction with the university administration when inquiring about the courses. These results are compiled in Figure 2.

Figure 2
Reasons for Choosing RSU for Language Study



A number of respondents stated that their reason for choosing to study at RSU was because RSU's distance courses were the only option available to them where they lived; however, it may be the case that RSU's distance courses were simply the only option available to them without tuition fees, which several respondents did specify. This highlights one of the ways in which the structure of a social welfare system can affect people's decision to study, as does the case of the respondent who enrolled so that her daughter could get more preschool hours approved (see section 5.2.3 below).

Another aspect of subjects' study opportunities is the technical infrastructure. Several respondents mentioned the quality of RSU's digital tools for distance courses (described in section 5.2.4) as a reason for choosing to study at RSU, while, conversely, others mentioned that they had been forced to drop out of the course because their internet connection did not function well enough for them to participate in the synchronous seminar discussions.

5.2.2 Subjects. The questionnaire respondents are representative of the population of language students at RSU in terms of gender and age.³ As mentioned above, pacing and timing factors make it possible for people to combine language studies with a full-time job or other activities, which may help to explain the

high median age of students. Figure 3 shows the gender ratios, average age, median age, and age-group breakdowns for all respondents and for each language of study.

Figure 3

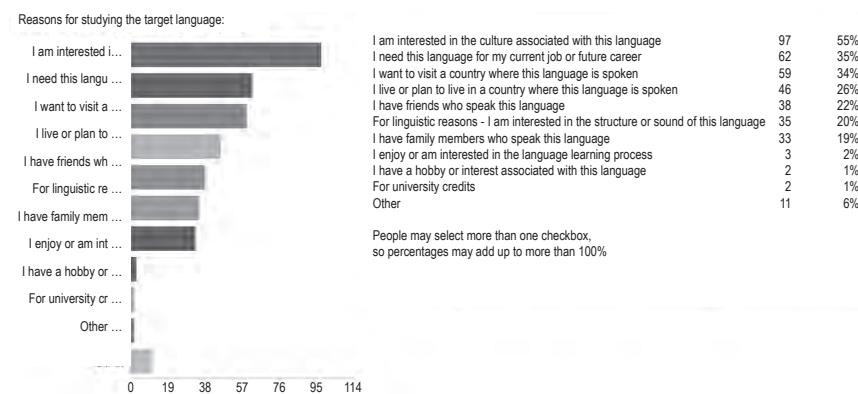
Subjects by Gender, Age, and Language Studied

	Total	Students of Arabic	Students of Chinese	Students of French	Students of German	Students of Italian	Students of Japanese	Students of Portuguese	Students of Russian	Students of Swedish
# Responded	176	19	38	5	8	19	31	19	13	24
% Female	58.9	83.3	43.2	80.0	80.0	57.9	54.8	47.1	58.3	73.9
Avg. age	34.2	25.6	35.4	37.2	31.6	44.5	27.9	34.4	40.7	27.0
Median age	29.0	30.0	33.0	27.0	25.0	44.0	26.5	29.5	40.0	25.0
% < 25	22.2	5.3	21.1	0.0	37.5	5.3	41.9	5.3	15.4	41.7
% 25-34	36.4	63.2	28.9	60.0	25.0	15.8	35.5	57.9	45.4	37.5
% 35-44	17.6	5.3	23.7	0.0	12.5	31.6	16.1	15.8	30.8	8.3
% 45-54	9.7	10.5	13.2	20.0	0.0	21.1	3.2	10.5	7.7	4.2
% 55-64	7.4	10.55	5.3	20.0	12.5	21.1	0.0	0.0	23.1	0.0
% > 65	2.3	5.3	2.6	0.0	0.0	5.3	0.0	5.3	0.0	0.0
Age not given	4.5	0.0	5.3	0.0	12.5	0.0	3.2	5.3	7.7	8.3

Fewer than half (43%) of the respondents were full-time students. More than half were employed in addition to their studies. The remainder (11%) were on parental leave, another type of leave, or retired. Swedish was a native language for 68% of the respondents, which means that nearly a third had a native language other than Swedish. There were 32 respondents with a native language other than Swedish who were not exchange students studying Swedish. It is not known how many of these are permanent residents of Sweden and how many come from EEC countries and have no direct connection to Sweden beyond their enrollment in the course.

5.2.3 Objects. Respondents were asked to indicate their reasons for choosing to study the target language, a multiple-choice question. Choosing more than one option was allowed, as were write-in answers. The responses are shown in Figure 4.

Figure 4
Reasons for Studying the Target Language



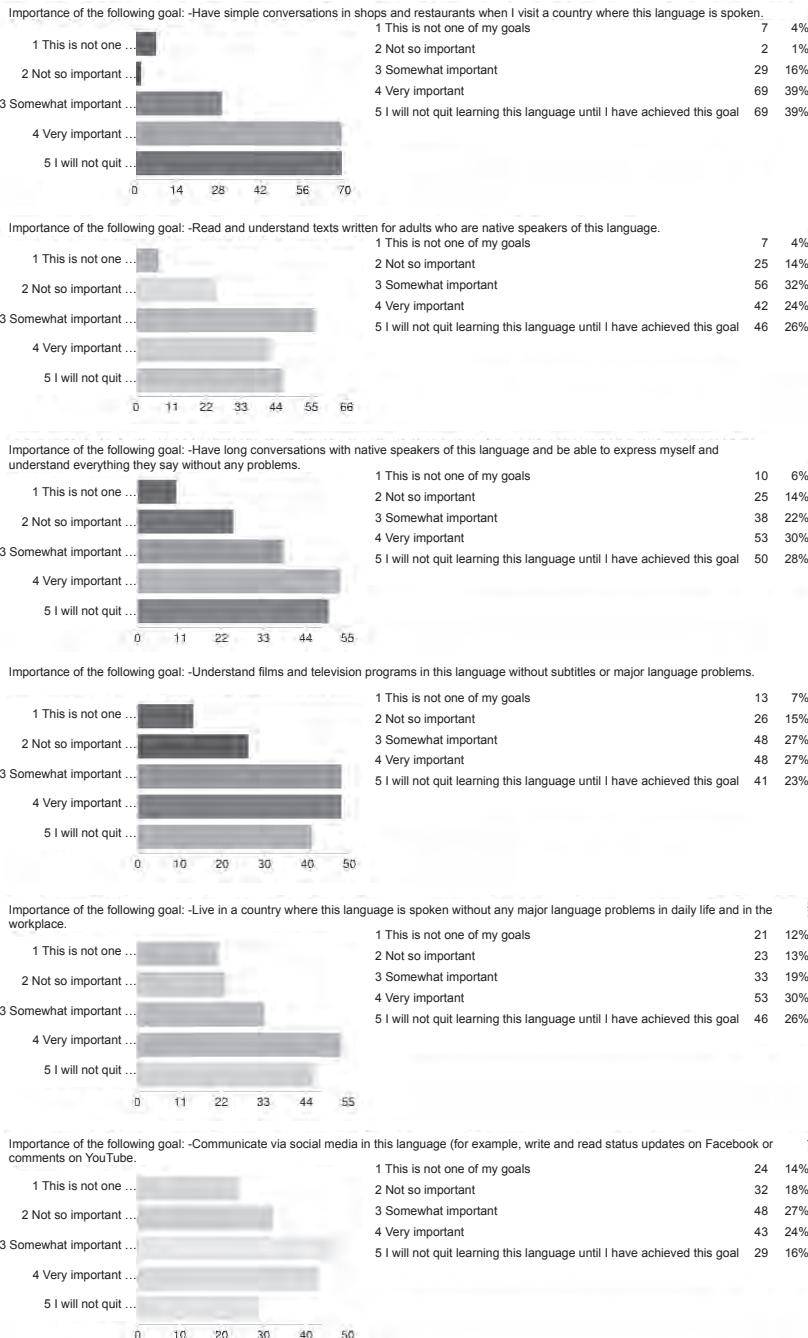
Other reasons, cited in write-in answers, which do not fit into the above categories are:

- Studied Japanese before in evening courses, have had customers in the Tokyo region, have travelled around in Japan, but now it was a way to get my daughter eligibility for 10 more hours of preschool.⁴
- I'd like to help my daughter with her studies of Chinese.
- Feels useful.
- Childhood dream.
- Want to learn a Romance language.
- I have converted to the Russian Orthodox Church.

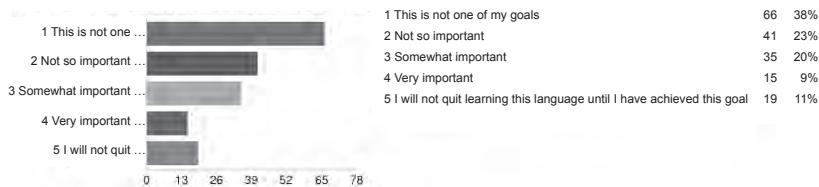
Another aspect of the objectives of language learning is how well a learner wants to know a language. Although learners often say that goal is to be fluent in the target language, fluency is a concept that is difficult to define and means different things to different people. Nevertheless, some sense was sought of whether the respondents were planning to read menus or write academic dissertations in the target language and how motivated they were to keep working on learning the language until they had achieved their goal. Based on the course objectives listed in the syllabi for the language courses as well as the responses to the pilot questionnaires, a list of possible language learning goals was created and respondents were asked to rate on a scale of 1 (*This is not one of my goals*) to 5 (*I will not stop learning this language until I achieve this goal*) how important the goal was to them. A follow-up question allowed them to write in any goals that they had that were not included in the list. The results are shown in Figure 5.

Figure 5

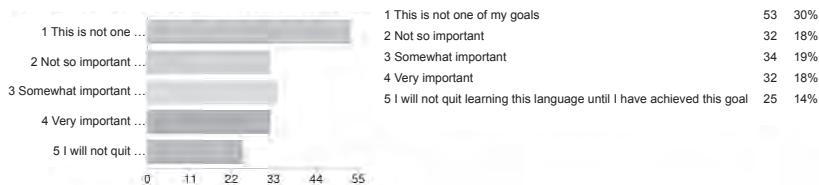
Goals for Language Learning and Their Importance to the Subjects



Importance of the following goal: -Write academic texts in this language.



Importance of the following goal: -Speak and write like a native speaker.



Sixty-three of the respondents took the option of writing in additional goals. Most of these answers fit into the categories defined in section 5.2.1 above, which is to say, respondents did not distinguish between reasons for learning the language and the kinds of skills they hoped to attain. The chart below shows the categories that emerged from the free-text answers regarding language-learning goals.

Figure 6

Additional Write-in Responses on Language-Learning Goals (categorized)

Other language learning goals not listed above:



Use in work or career	16	9%
Interest in the language learning process	8	5%
Speak with family members	7	4%
Appreciate culture or history	6	3%
Use in daily life	6	3%
Be able to travel	6	3%
Communicate with people generally	6	3%
Achieve "proficiency"	5	3%
Understand news and information	4	2%
Use in a hobby or interest	3	2%
Develop native-like pronunciation	3	2%
Understand conversations passively	3	2%
Gain an academic qualification	2	1%
Understand religious texts/speech	2	1%

People may select more than one checkbox,
so percentages may add up to more than 100%

Other goals included:

- [Portuguese] as a basis for understanding Galician.
- Getting inspired by the Chinese language and becoming a better poet.
- I would be able to write an awkward book in Portuguese

Not all respondents agreed with the way of framing language learning goals presented by the questionnaire, as one respondent wrote: "This question is put in a tricky way. One might think that something is important, but still may not have a high level of ambition or confidence that one will be that good at it."

One of the most surprising results of the data on objectives was that developing the ability to write academic text in the target language was considered the least important by the respondents. Even though this is ostensibly more easily achieved than being able to speak and write like a native speaker, and even though these university courses are, at least in principle, supposed to lead to an academic degree of which academic writing is a part, less than half considered this goal at least somewhat important, and only 20% thought it was very important.

5.2.4 Tool-mediated activities. RSU has a variety of different digital resources available for teachers and students to make use of in courses. Those which are used in the language courses are WebMail, a basic e-mail client, Fronter, a learning management system, and Adobe Connect, video-conferencing software used for online seminars. Distance courses make use of all three of these tools, while campus courses meet face-to-face and do not use Adobe Connect. As mentioned above, Swedish was the only language taught on campus; however, some of the respondents studied Swedish by distance as well. In all, 90% of the respondents were studying by distance.

A majority (57%) of respondents had used a means of communication other than those provided by the university to interact with their teachers and classmates; in most of those cases, they had used another e-mail system than WebMail (32%). Additionally, a significant number had used Skype (21%) and Facebook (31%) in the context of the course. The tools not provided by the university used by the respondents can be seen as a mirror of the ones provided by the university: an e-mail client, Skype as a video conferencing platform, and Facebook as a place for asynchronous interaction and file sharing that has some similarities to a learning management system.

An overwhelming 87% of respondents said they had used the target language in some way beyond course meetings and course assignments, such as listening to music (48%), watching films or TV programs (47%), obtaining information on the internet (23%), reading books and newspapers (21%), and communicating with people online (20%). This is particularly remarkable when considering that the respondents were enrolled in beginner-level courses. Even with little formal study, they were making use of the target language in real-life situations.

Additionally, 39% of respondents had done some kind of self-study of the target language beyond what was required for their course. Their responses are shown in Figure 7 in the form of a chart that gives a view of the extent to which the tool is a physical resource, a digital resource, and/or an internet-mediated resource, as well as whether the tool was designed specifically for the purpose of language learning, or whether it was repurposed for language learning by the respondent.

Figure 7

Tools and Activities for Self-Study

	Resources predesigned for language learning		Designed for learning but not necessarily language learners	Designed for foreign language issues but not necessarily learning	Resources or activity designed or repurposed by learner for language learning		
Completely internet mediated	Online language courses	Facebook Word of the Day	Wikipedia	Google Translate	Online newspapers	Films and TV on YouTube or similar	Social media
	YouTube instructional videos	Online language partner			Podcasts	Music	Computer games
Partially internet mediated	Apps						
	Self-study courses + online content	Radio course					Workplace tasks
Digital media but not internet mediated	Audio courses	Self-study courses (book + audio)		TV/films with subtitles	Audiobooks		Recording own voice for playback
Nondigital physical media	Self-study courses (book only)	Bilingual dictionaries	Simplified books		Books, newspapers, magazines	Making flash cards	Drawing pictures
	Pen pals		Children's books		Crossword puzzles		
			Monolingual dictionaries				
Little or no physical media	Language partner	Language café			Singing songs	Talking to people in the street	Talking to friends, family, coworkers

A separate question asked whether respondents had used the target language in any other ways besides those already mentioned. The activities which were cited in the responses to this question were remarkably similar to the tools for self-study above (see Figure 8).

Figure 8

Ways of Using the Target Language Beyond the Classroom and Self-Study

	Resource predesigned for language learning	Designed for learning but not necessarily language learners	Designed for foreign language issues but not necessarily learning	Resource or activity not designed for language learning	
Completely internet mediated	Online courses		Using Google Translate to post an ad in a newspaper	Online chat	Searching for info online
	Websites with language learning resources			Watching films/ YouTube online	Talking with relatives on Skype
	Online discussion group			Online games	Online shopping
				Interacting on social media	Reading online news
Partially internet mediated	Apps	Writing an application for study abroad		Radio	Computer games
Digital media but not internet mediated		Conducting interviews for a master's thesis		Reading texts on the background in TV shows	Analyzing song lyrics
		Watching children's programs on TV		Watching films	
Nondigital physical media	Pen pal	Reading children's books		Reading books, newspapers, magazines	Drawing/doodling
				Reading instruction manuals	Reading street signs
Little or no physical media	Offline discussion group		Talking to pupils	Talking to self	Talking to people in the street/in daily life
				Speaking the language to people who do not speak it	Talking to friends/family

In most cases, individual respondents did not list the same resources as answers to both of the questions, so it is noteworthy that some respondents considered certain activities and tools to be study resources, while others just see them as manifestations of language use. Furthermore, there is balance between different types of mediation and between tools and activities intended for language learning and those repurposed by the respondents. Clearly, both digital and nondigital tools are salient to the learners, providing further support for the normalization of CALL. To focus only on computer-mediated learning would ignore a large portion of the respondents' learning environments.

6. Discussion

As mentioned in section 5.1, the questionnaire data do not directly address the *community* and *division of labor* aspects of the activity-theory/PLE framework, which indicates a need for further research using additional methods. However,

some understanding of these aspects can be extrapolated from the data. The first is that the community aspect of the PLE can extend far beyond the classroom. Many of the respondents are active in target-language communities online and offline. Some indicated that they are already part of a community of speakers of the language in a traditional sense: either they are already living in a country where the target language is spoken or they have family members who speak the language. Others are part of the community in ways that have been made possible by new, internet-based tools: social media, online gaming, and consuming cultural products such as films, television programs, and news sites.

As shown in section 5.2.4, the respondents reported an ability to find their own learning tools and make connections with the target-language community. The coursework is not always the central aspect of the respondents' language learning. The division of labor is not one of teachers creating opportunities for students to use the language; the need for a teacher to act as a bridge to the target language community and provide authentic language materials is no longer self-evident.

What is it, then, that language students cannot easily find on their own? I would argue that students continue to enroll in formal language courses despite the easy accessibility of self-study tools because they want professional feedback from a person with a vested interest in their progress and a structure for studying that includes benchmarks and deadlines. These needs are not likely to be made obsolete by technology in the near future. This question is currently under investigation in the second stage of the research project.

There are several additional points which I would like to make based on the results of the empirical study. The first is that exploring the applicability of technologies for language learning can be done bottom up rather than top down. Franklin (2007) suggests that "teacher educators can empower their students to use the same social technologies that they find so engaging in their personal lives—blogs, wikis, podcasts, and YouTube videos—as tools for interpretive, interpersonal, and presentational modes of communication in the language classroom" (p. 204). The results above show that even beginner-level learners are capable of finding tools and activities for learning and using the target language beyond what is required in their coursework. Respondents indicated using a wide variety of different tools in their self-study practices and in their use of the target language outside the classroom.

The second point is that digital tools do not replace non-digital tools; they complement them. The results show that non-digital forms of self-study and language use continue to be relevant to learners, even for students whose formal studies are entirely digitally mediated. This supports the call for CALL research to be normalized (Egbert, 2006; Chambers & Bax, 2006; Kern, 2006; and Bax, 2008) because it is difficult to justify isolating one kind of tool from another simply because it has a screen when screens are increasingly ubiquitous.

For similar reasons, the third point is that that the digital native/digital immigrant distinction (Prensky, 2001; Benini & Murray, 2014) is questionable. 41.5% of the respondents in the study were born before the first generation of digital natives, yet 90% of them chose to enroll in a distance course that was entirely

technology mediated. That a large majority of respondents reported extracurricular technology-mediated language use provides a further challenge to the digital native/digital immigrant metaphor.

The fourth point is that learner objectives do not always correspond to curricular objectives. Few of the respondents were interested in developing academic writing skills in the target language, despite the fact that university-level studies are expected (by the regulations applying to higher education in Sweden, at least) to lead to a degree, which requires academic writing. On the other hand, respondents showed a great deal of motivation to put their language skills into use in work or daily life contexts, even from the very beginning of their language studies, which leads to the fifth point: the lines between language learning and language use can be blurred, and this is enabled in part by technology. Respondents reported engaging in a number of activities in the target language beyond their coursework and what they considered self-study; many of these activities (e.g., shopping, gaming, chatting, watching films, and searching for information) were done online; making use of the target language in these ways from one's own home—wherever in the world that might be—would have not been possible in the pre-internet era.

7. Conclusion

This chapter set out to illustrate how an activity-theory-based framework can be of use for making sense of the personal learning environments of adult learners of foreign languages. By inquiring about students' objectives for language learning and the tools they use, it was shown that even students enrolled in a beginner-level course were able to find ways to study and make use of the target language beyond what was asked of them in their coursework. Some of the extracurricular activities respondents engaged in were mediated through digital technology while others were not, illustrating the importance of a research framework that does not focus solely on digital tools.

The results indicate a need for in-depth, case-study-based analysis that views the subjects as individuals rather than a collective. The insights gained from looking at a group of adult learners voluntarily taking a language course do not necessarily generalize to all language teaching situations. Nevertheless, they suggest that opportunities exist for language learners of all kinds to expand the tools and communities of their personal learning environments through technology that is readily available today.

One concrete way for teachers to make use of the wealth of potential CALL tools and avoid the issues associated with top-down classroom technology implementation would be to give students an individual or group assignment in which they find ways to use the target language outside the classroom and present them to their classmates. This would achieve several goals simultaneously: (a) getting students engaged with the kind of tools and communities that they themselves find interesting rather than having a tool imposed on them by a teacher; (b) helping distribute technical knowledge between students, reducing the digital divide between students with different background experiences; and (c) broadening the teacher's knowledge on the kinds of tools available to help avoid the situation I

described at the beginning of this chapter—wondering, despite my own interest in and enthusiasm for technology and language learning, if I really had the expertise necessary to advise students on CALL.

Notes

¹ RSU also offers courses in Spanish and English, but not at the beginner level.

² The cost of each 7.5 credit language course for students at RSU who are not residents of EEC member countries was 21,000 Swedish crowns (approximately €2300) per course in the 2013–2014 academic year. It is not known whether any of the respondents to the questionnaire were fee-paying students.

³ 58.9% female, close to the 60% ratio for undergraduate students in Sweden as a whole (Swedish Higher Education Authority, 2013) and median age of 29, higher than the median age for those entering undergraduate study in Sweden, which is 21 (Swedish Higher Education Authority, 2013).

⁴ Preschool child care is subsidized in Sweden, but the number of hours per week of child care allotted to a child depends on the parents' employment or student status. Children whose parents are not working or studying full time are entitled to fewer subsidized child care hours. By registering for a course this respondent was able to increase his/her child's eligibility by 10 hours per week.

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Chapter 18

Educational Data Mining for Elementary French On-line: A Descriptive Study

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Summary

The purpose of this study is to explore Long's (1980) 'black box,' but instead of using the traditional classroom as a point of departure, the aim is to describe what is happening in the 'black box' of an online language course. As Fischer (2007) noted, "Computer-based tracking can be characterized as a form of ethnographic research. As ethnographers enter a community of practice and interview informants to collect data . . . , so too, can the computer collect data on how students use software." (p. 411) This paper focuses on data collected from 135 students using the French On-Line course offered at Carnegie Mellon University in spring 2014. The data were made available through the DataShop web application offered through the Pittsburgh Science of Learning Center that collects course data from courses deployed through the Online Learning Initiative. The dataset examined from this iteration of the course contains 958,636 transactions, which is to say, student clicks on lesson pages. The data can be studied according to lesson, lesson section, exercise type, and student. Further information from the data can be prioritized according to the performance metrics of error rate, correct response rate, duration in seconds (time on task), among other options. The data evaluated here show that there are certain behavioral patterns that indicate a drop-off in online 'class participation' toward the end of a lesson and that particular exercise types are less used by students. Studying these types of data could have an impact on online language course design and research, but primarily on how instructors can guide students' strategies to benefit the most when using online language courses.

1. Introduction

This research project is a first attempt at analyzing data from the French On-line (FOL) Elementary 1 course offered through Carnegie Mellon University and hosted by the Online Learning Initiative (OLI) and the Pittsburgh Science

of Learning Center (PSLC).¹ The PSLC hosts the web application DataShop that offers researchers a repository for data and data analysis tools. FOL is hosted and managed by OLI, although its authors, technical experts, and educators are part of the Department of Modern Languages at Carnegie Mellon.

The impetus behind this study is how this data can prove interesting and/or useful to educators: How much time do students spend on lessons, sections of lessons, exercises for lessons? What do students do when they have questions? Do they continue without the answer, or do they return to an explanation and then retry the exercise? What is an average amount of time that students spend in an online language course, in each section, and on each exercise? If the time is not ‘equivalent’ to the time students spend in a traditional course, does this mean that the online learner is disadvantaged in some way?

2. Literature Review

Due to the fact that instructors do not know what learners do while online, Chapelle (2001) writes that “it is necessary to identify the observable data that provide evidence of CALL [computer-assisted language learning] qualities” (p. 66). Hwu (2003) shows in her study that time on task is not always a useful indicator of how much time students ‘really’ spend working online due to multiple factors, for example, getting distracted, opening a page and leaving it open unintentionally, or even visiting a page quickly to print it and then working offline. In order to quantify student time on task, she suggests gauging how much time students ‘should’ spend on specific pages, for example, looking at a student’s 20-second time for a video lasting 35 seconds.

Educational data mining (EDM) can offer multiple approaches for examining student online behaviors; certain datasets can be explored in depth for the benefit of educators, designers, and learners. Using EDM to explore student behaviors in FOL is necessary because like Long’s (1980) ‘black box’ regarding classroom learning, online student language learning is a void; educators remain mostly unaware of any student behaviors except for software which can log page visits. Fischer (2007) argues that tracking student usage as opposed to using surveys only is vital to understanding what goes on online (p. 413). For him, “without knowing what students really do when they use software, CALL researchers and developers run a substantial risk of operating in an empirical vacuum” (p. 413). Fischer calls for multiple observation methods of student online behaviors, including recording software, for example Camtasia, which can unobtrusively observe students’ behavior. Chapelle (2001) likewise proposed this approach, stating that similar to, yet unlike, classroom research, “the computer is able to record the language and some non-linguistics moves that the learner makes to provide a more detailed and readily available record of learners’ behavior than can be gained through other forms of observation” (p. 67). Combining observations and surveys with applications like DataShop, millions of transactions could be manipulated quickly into myriad views of student online behavior and subsequently supported or disproved by matching the data logs to observed behaviors.

In the Introduction to the *Handbook of Educational Data Mining*, Romero,

Ventura, Pechenizkiy, and Baker (2011) write that data “can be analyzed to easily address questions that were not previously feasible” (p. 1). Among the many uses of EDM listed in their Introduction is “Maintaining and improving courses” (p. 4). One of the most efficient ways of improving courses is to analyze what students are doing, which questions they always get wrong, which questions they skip, and the like. Data analysis can help educators understand where the online course is inefficient and where it could potentially lead to student disinterest and even failure. Educators and designers aim to build the most effective course; however, the end user (student) is a highly important factor related to course effectiveness. For example, Tallent-Runnels et al. (2006) found that students’ learning is affected by the quality of the online course.

Youngs (2014) researched student achievement on FOL Elementary French 1 tests. For one item, she found that every student responded incorrectly to one specific question. Upon further investigation, she found that every student provided the wrong answer because the lesson had not sufficiently explained the ‘exception’ to the grammar rule. Problematically, course improvements are sometimes indicated due to a lack of positive learning curve on student outcomes. Studying further analyses of different lesson sections showing that students performed without a clearly indicated positive or negative learning curve, (students made fewer or more errors as they proceeded through the course without any visible trend), Youngs theorized that some aspects of an online course, such as vocabulary learning, might not necessarily show a statistically relevant improvement because each new lesson presents new vocabulary. If a learning curve is flat and does not show evidence of huge error rates, then perhaps this indicates that students are maintaining a steady learning pace and that course changes are not needed.

In addition to ‘Maintaining and improving courses’ in the Introduction to their volume, Romero et al. (2011) cite the use of data analysis for ‘Student modeling.’ The authors explain that student modeling involves awareness “of student states and characteristics such as satisfaction, motivation, learning progress, or certain types of problems that negatively impact their learning outcomes” (p. 4). For example, Hershkovitz and Nachmias (2011) used a study of Hebrew vocabulary to design a study for the purpose of developing a log-based motivation-measuring tool. Their intentions were to capture a more affective aspect of student online learning behavior, explaining that “Emotional and/or affective states (e.g., motivation, anxiety, boredom, frustration, self-efficacy, and enthusiasm) are sometimes easily noticed in the classroom (e.g., by facial expressions), but they are hard to measure and evaluate” (p. 287). Sheard’s (2011) case study of log data from a web-based learning environment showed that higher achieving students spent more time using the website in question than lower achieving students. She found further that the students used the online environment differently and engaged with their work based on whether it was mandated and assessed. Ultimately, by examining data logged from online courses, it is possible to take note of specific student use that would then focus research questions through the use of observations and surveys.

Additionally, time on task is a question that can be addressed using data from online language courses. Chenoweth and Murday (2003) found that shorter amounts of contact time between the traditional classroom and the hybrid model did not disadvantage the FOL students. Schnackenberg, Sullivan, Leader, and Jones (1998) found that students who finished all the practice problems outperformed those who did not. Quality time on task could therefore be partially determined by examining when students decide to complete their online work. Romero and Barberà (2011) note that given a full day of classes, work, and play,

We might therefore expect students to engage in learning time after their primary activity, at a time of day when alertness is lower, both because of the time of day and the fatigue caused by the primary activity, assuming that, in general terms, the evening and night are times when cognitive quality is diminished and the morning and weekends are the times with the highest cognitive quality because of the absence of a previous activity.

The authors found that for individual activities, students performed best in the morning hours. An informal undergraduate research study² found that approximately 75% of student work in the FOL course was done during the afternoon, evening, and late evening, with 35% of it being done in the late evening towards early morning. Whether students are working and successful after midnight would be a question that data could answer. In these scenarios, it is important that both the learner and the instructor be responsible and accountable for learning. Chappelle (2001) writes that “learners cannot be expected to [be accountable] on their own; therefore, teachers have the responsibility of drawing learners’ attention to the need to be aware of the language that they are acquiring in such a way that they can take stock of where they are and plan for their own development.” (p. 50) Ushida (2003) echoes this idea as she found that self-discipline and motivation are key factors in online courses but that the teacher figure remains an important influence on student motivation.

3. Research questions

The purpose of this study is to provide a clearer view of how students behave in an online language course. Therefore, the research questions are straightforward and involve time on task and error rates. With respect to student behavior regarding time spent in the online course, there are two questions:

1. Given the structure of the FOL course, in which sections do students seem to prefer to spend their time?
2. In examining the several types of interactive activities offered to students in the FOL course, on which activities do students seem to prefer to spend their time?

With respect to error rates, which could relate to questions of motivation and/or time on task, there are also two questions:

3. Given the structure of the FOL course, in which sections do students have a higher rate of incorrect responses?

4. In examining the several types of interactive activities offered to students in the FOL course, on which activities do students earn higher rates of incorrect responses?

Findings for these four questions could help not only in training students to use online language courses more effectively, but also in teacher training, instructional design, and improvement of course materials.

4. Method

4.1 Data

The data collected and described using DataShop and Excel were based on the following materials and exercise types found in French On-line Elementary French 1 during the spring 2014 iteration of the course. The dataset for spring 2014 contains 135 high school and college students, totaling 958,636 transactions in the course, equaling 1,097.51 hours of student time spent in the course. Because the data is anonymized for each student user, no information on age, gender, or years of previous French study is available. The data were analyzed using DataShop, when possible, and Excel to describe trends related to learner/user behavior.

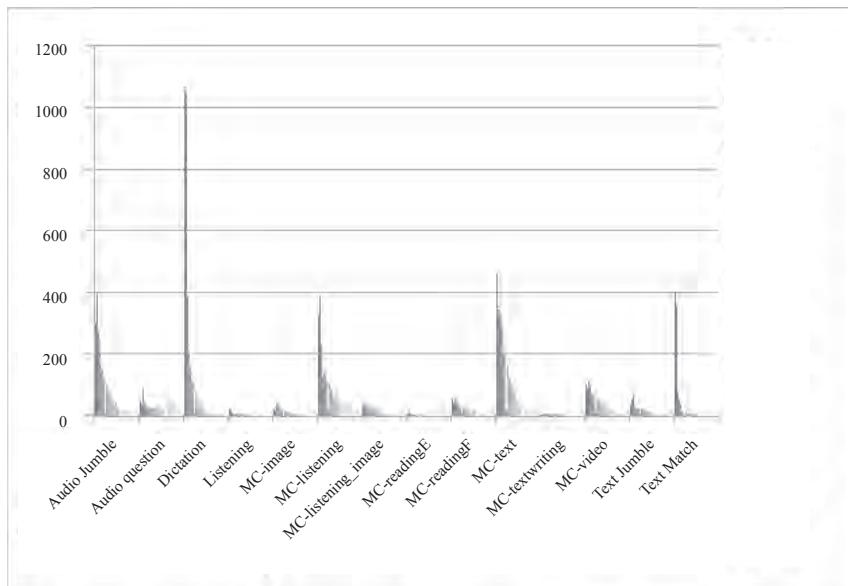
With respect to the course data, all courses deployed and managed by OLI are created by designers and authors and based on the available technology, for example, for creating exercises, providing feedback, and inserting video and audio files. Coding for the courses is done by hand and mistakes in coding are made. Therefore, when courses are uploaded to DataShop, some computing errors occur. For example, transactions that fail to upload properly and display the proper name linking the transaction to a page or exercise in FOL are difficult to categorize. Some data are limited, given that students perform different numbers of transactions in the course, meaning that they were perhaps less interested in certain sections of the course or dropped the course; in fact, any data showing a decline in later lessons would be pertinent to any descriptive study. Lastly, the number of transactions is key to understanding student behavior due to the fact that a minimum number of clicks needed to get through several items of each activity in Lesson 1, for example, comes to just above 200.

At this stage of the study, the decision was made to not remove outliers. Understanding student behavior using these data requires a study of all types of student behavior, not simply the ‘good’ students. It is important for educators and course designers to be aware of students showing a wide range of, or ‘erratic,’ behaviors throughout a course with an eye to developing a better understanding and possible future course improvements.

As an example of outliers, Figure 1 shows a histogram of the multiple exercise types in FOL, sorted by their latency, which is the time that students spent on a lesson page containing an exercise. Extreme outliers were deleted from the data and are discussed later.

Figure 1

Latency in Seconds Sorted by Exercise Type, Including Outliers



FOL Elementary 1 and 2 courses have been available for student use for more than 15 years. Since its inception, use of the course has built up to include not only Carnegie Mellon students, but also other colleges and universities, high schools, and independent learners around the world. Each course contains 15 lessons and is intended for use over one college semester. The scope and sequence of the courses were determined by its authors and adjusted for the content of the videos that were filmed in France with native speakers of French. Each section of each course is consistent throughout all 15 lessons: *Introduction*, *Communication 1*, *Mots et expressions* ‘Words and expressions,’ *Structures* ‘Structures/Grammar,’ *Sons* ‘Sounds/Pronunciation,’ *Communication 2*, *Culture*, and *Activités de synthèse* ‘Lesson culminating activities.’ There is also a section called *J’ai appris* ‘I have learned’ where students find a list of items learned during that lesson for review purposes and *Suppléments* ‘Supplemental Activities’ for student exploration. Figure 2 shows a partial typical hierarchy of Elementary French 1, Lesson 1. The lesson sections are divided into separate content, as are their subsections. The page numbers for easy navigation are on the right hand side.

Figure 2

The First Three Sections of Lesson 1 of Elementary French 1

<u>Introduction to the lesson</u>	<u>11</u>
Communication 1	
<u>Introduction to the Communication 1</u>	<u>12</u>
Bonjour	<u>13</u> <u>14</u> <u>15</u>
Salut	<u>16</u> <u>17</u> <u>18</u>
Je m'appelle Éric	<u>19</u> <u>20</u> <u>21</u>
Épeler	<u>22</u> <u>23</u> <u>24</u>
Mots et expressions	
<u>Introduction to the Mots et Expressions</u>	<u>25</u>
Bonjour	<u>26</u> <u>27</u> <u>28</u>
Salut	<u>29</u> <u>30</u> <u>31</u>
Je m'appelle Éric	<u>32</u> <u>33</u> <u>34</u>
Épeler	<u>35</u> <u>36</u> <u>37</u>
Structures	
<u>Introduction to Structures</u>	<u>38</u>
Formality	<u>39</u> <u>40</u> <u>41</u> <u>42</u>
Subject pronouns	<u>43</u>
The verb parler	<u>44</u>
The verb aller	<u>45</u>
Conjugation exercises	<u>46</u> <u>47</u> <u>48</u> <u>49</u> <u>50</u> <u>51</u> <u>52</u>
Stressed pronouns	<u>53</u> <u>54</u>

The *Introduction* section to the lesson offers students some advice and a glimpse into the lesson content. There are no exercises in this section.

The *Communication 1* section introduces students to the lesson content, presented through video vignettes. Normally, two to three vignettes make up the *Communication 1* section, each vignette beginning a new subsection (*Bonjour* ‘Hello,’ *Salut* ‘Hi,’ *Je m'appelle Eric* ‘My name is Eric,’ and *Epeler* ‘Spelling’ in Figure 2) and containing multiple pages. There are two types of activities in this section: multiple-choice audio question exercises to confirm basic comprehension of the video (some language, but also behaviors—greetings, leave takings, complaining, etc.) and ‘audio jumble,’ an exercise in which students listen to snippets of sentences or questions taken from the vignette dialogue and rearrange the snippets into complete utterances.

The *Mots et expressions* section is the lexical section of the lesson, introducing both vocabulary in context (utterances from the dialogue) with selected roll-overs

for translation and clickable voice recordings of the *Communication 1* dialogues, but here recorded by different native speakers. This section also provides students with the video control of the dialogue subtitled in French. Each subsection title is the same as the ones found in *Communication 1*. There are multiple types of exercises offered in this section throughout the course, including dictation, multiple-choice exercises, and readings.

The *Structures* section describes and provides instruction on the grammar and special structures used in the lesson. In early lessons of Elementary French 1, this section uses English for explanations. In later lessons, when students are more advanced, it changes over to French. Exercises in this section are typically dictation and multiple-choice questions.

The *Sons* section presents key pronunciation issues, for example, distinguishing between the French /u/ and /y/ (as found in the words *tout* and *tu*). Exercises here are normally multiple-choice sound files and dictation.

The *Communication 2* section provides less guided input to students and allows them to make assumptions about the language they hear, related to the lesson's content and grammar, and most often presented through short videos (in Elementary French 1 the average length of these videos is 26.9 seconds). Exercise types include, but are not limited to multiple-choice, and text jumble, similar to audio jumble only the students re-arrange written sentences to create a dialogue.

The *Culture* section includes exercises related to French and francophone cultures and moves from image-oriented explanations to longer texts with visuals over the duration of the course. Exercises include multiple-choice and writing.

The *Activités de synthèse* section provides students with exercises to be done in common written forums, synchronous written chats with classmates, or oral tasks to be done face to face (in person or via Skype) with the instructor or speaking assistant. The final piece of this section is the lesson test and is accessible only to enrolled students.

4.3 French On-line Exercise Types

There are seven exercise types in FOL, unless the multiple-choice (MC) variations are broken out, in which case there are fifteen types: Audio Jumble, Audio Question, Dictation, Listening, MC-image, MC-listening, MC-listeningimage, MC-listeningtext, MC-readingE, MC-readingF, Text Jumble, and Text Match. In all exercises, students receive feedback, and after three attempts they are given the targeted answer.

- Audio Jumble: Students are given a recorded sentence and must organize pieces of the sentence to match the prompt.
- Audio Question: These are multiple-choice questions specific to *Communication 1* that prompt students to think about the words and content of the vignette videos.
- Dictation: These are sentences for students to type into a text box. Feedback is provided for any incorrect letters or missing accents.

- Listening: These are opportunities for students to click on and listen to utterances, normally found in *Mots et expressions*, but in other sections as well.
- MC-image: These are multiple-choice questions in which the prompt is an image, normally used in *Mots et expressions*.
- MC-listening: These are multiple-choice questions in which the prompt is a sound file, normally very short, often used in *Structures* and *Sons*.
- MC-listeningimage: These are multiple-choice questions in which the prompt is an image or a sound file and students must choose either a matching sound file to the image or the image to the sound file.
- MC-listeningtext: Like ‘listeningimage,’ these are multiple-choice questions in which the prompt is a sound file and the student must choose the answer from among text options.
- MC-readingE: These are multiple-choice questions in which the prompt is a reading in English or French, depending on the lesson, and the student chooses among responses provided in English.
- MC-readingF: These are multiple-choice questions in which the prompt is a reading in French and the student chooses among options provided in French.
- Text Jumble: Like audio jumble, students must read the sentences and put them in order to make sense of the text.
- Text Match: This is similar to dictation except that students match single words to the answer instead of full sentences. This could be used to distinguish and write the spelling of verb tenses, for example, from a sound file.

4.4 Analyses

The purpose for the data analyses was to identify any trends that could lend insight into student behavior during their use of an online language course, behavior that might be considered pedagogically as moving or not moving toward achieving learning outcomes. Without data analyses, the best, yet insufficient, evidence of achieved learning outcomes that instructors have is student results (i.e., grades). The research questions are addressed according to lesson section and exercise type, discussing time spent and then error rates.

4.4.1 Lesson sections: time. Given the structure of the FOL course, in which sections do students seem to prefer to spend their time? Table 1 shows transactions for each lesson section, for all 15 lessons and all 135 students, as well as the range of total seconds spent in each lesson section, and the mean, median, and mode of seconds spent in each lesson section.

Table 1

Number of transactions, Range, Mean, Median, and Mode for Each Lesson Section

	Number of transactions	Range in seconds	Mean in seconds	Median in seconds	Mode in seconds
Communication 1	4,428	0-7,095	109.23	44	11
Mots et expressions	6,882	0-7,251	57.97	22	5
Structures	2,500	0-5,388	59.62	24	4
Sons	2,393	0-6,137	52.66	25	0
Communication 2	2,245	0-6,133	95.29	51	0
Culture	1,593	0-2,659	57.30	25	0

Note: The following outliers were removed from lesson section data: 63,840 seconds (17.7 hrs), 81,625 seconds (22.67 hrs), 149,134 (49.86 hrs), 179,503 seconds (49.86 hrs), 244,606 seconds (67.94 hrs), and 1,795,111 (498.64 hrs).

Figure 3

Mean, Median, and Mode Time for Lesson Sections (Expressed in Seconds)

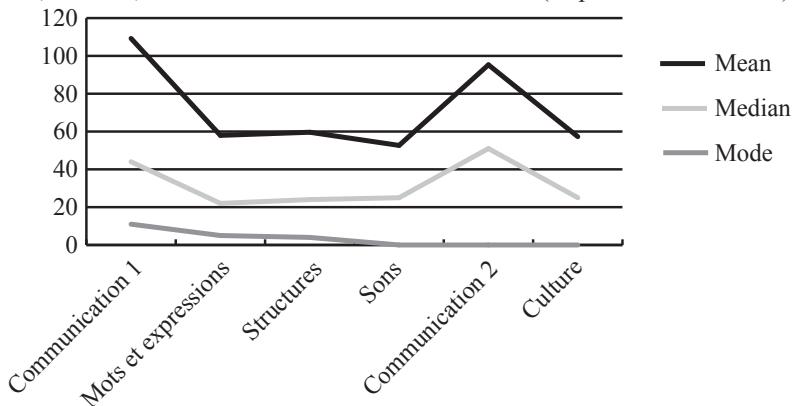


Figure 3 shows that the mean and median follow very similar patterns of student transactions for each section of the lesson, perhaps indicating that the last two sections of the lessons are more difficult, thus requiring more time on task. However the mode indicates that many students spend fewer than 20 seconds in each section. While it may be logical to assume that students spend more time in the earlier sections of the lessons as they begin their study, the chart shows that the mode of time spent on the sections is quite low, and in fact '0' seconds for *Sons*, *Communication 2*, and *Culture*.

The questions on which observations and surveys might provide some insight are (a) why does student work drop off near the end of each lesson and (b) how is it possible that some students spend zero time in some lesson sections. As Table 1 shows, students start out strong with 11,310 transactions in the first two sections of a lesson but then drop to 8,731 transactions for the remaining four lesson

sections. One explanation could be that the later sections are more difficult than the earlier ones, causing students to ignore more difficult work. One could also argue that the first three sections are ‘more important’ if students are considering the ‘value-added’ of certain lesson sections with respect to earning better grades on the lesson test (questions on *Sons* and *Culture* are of course included in each test). Students may also believe that *Communication 1* and its oral/aural work, when added to the vocabulary work in *Mots et expressions*, are sufficient to earn good test grades. Another possibility is that students are mentally fatigued after completing the first three sections, and, when combined with the previous two possibilities noted here, one lesson per week is too difficult a pace to maintain throughout a semester.

4.4.2 Lesson sections: error rates. Given the structure of the FOL course, in which sections do students have a higher rate of incorrect responses?

By using DataShop to sort the data, we were able to pinpoint where student errors occur and with what percentage. For example, for all 135 students, 887 exercise pages were identified for the course. Of these, 72 show that students make no errors, meaning that every student who attempted those exercise items made no mistakes. Data on which lessons contained 0–100% errors are broken down in the following tables. Table 2 shows for each lesson how many exercise pages have 0% errors and how many have 100% errors.

Table 2

Number of Exercise Pages with 0% or 100% Errors in Each Lesson

Lesson	# of exercise pages with 0% errors	# of exercise pages with 100% errors	Lesson	# of exercise pages with 0% errors	# of exercise pages with 100% errors
1	26	3	9	7	8
2	4	0	10	3	2
3	1	4	11	4	2
4	5	4	12	8	6
5	4	5	13	0	5
6	4	2	14	2	5
7	1	4	15	3	0
8	0	5	Total	72	55

For example, Lesson 1 has 55 exercise pages with exercises requiring an action by students. Of these 55 exercise pages, 26 of them are of such a low difficulty level that all 135 students made no mistakes in any of the items of each exercise. This means that 47% of the exercises in Lesson 1 were written at a level easy enough for all of the students to receive a score of 100% correct. On the other end of the spectrum, students answered no question correctly on three exercise pages (6%), leaving a balance of 26 pages (47%) on which students have mixed scores. A breakdown of percentages correct and incorrect of the total of 887 pages in all lesson sections is shown in Table 3.

Table 3

Number of Exercise Pages Sorted from 100% Correct to 100% Incorrect

On these exercise pages	students replied
1-72	100% correct
73-634	51-99% correct
634-831	50-99% incorrect
831-887	100% incorrect

The number of exercise pages with 100% correct requires some comment. This number does not necessarily mean that the lessons in the course were not appropriately challenging. Although we screen out false beginnings quite rigorously at Carnegie Mellon, it could be expected that some students had some prior knowledge of French before beginning the course. Without pretesting, we cannot be sure. However, even if it were the case that students had some prior knowledge, the lesson sections with the most errors do not support this hypothesis because we would expect students with such prior knowledge to do well on the early lesson sections and less well as the lesson progressed.

As an example, Table 4 shows the error rates for each section of all 15 lessons.

Table 4

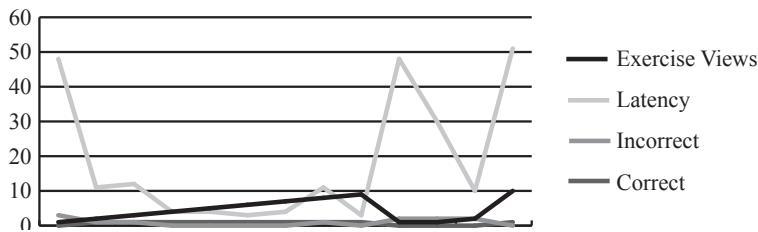
Error Rates for All Lesson Sections in All 15 Lessons

Section	Number of transactions	Mean error rate	Median error rate	Mode error rate
Communication 1	4,429	1.32	0	0
Mots et expressions	6,886	1.10	0	0
Structures	2,501	1.48	0	0
Sons	2,394	1.46	1	0
Communication 2	2,447	1.96	1	0
Culture	1,594	1.74	1	0

The table shows that the error rate as determined by the mode is '0' for each section, which is a positive indicator, although the mean still indicates difficulties with some lesson sections more than others. This could support the hypothesis noted above, that students with prior knowledge perform better on earlier rather than later sections of the lesson. However, the prior knowledge, if accepted as a hypothesis, would have to provide support throughout the entire course, which would seem unlikely for a true beginner.

For a close view of one student's work on one exercise page of *Structures* in Lesson 1, Figure 4 shows the latency (time spent in seconds) on this exercise's items, attempted 13 times. This graph seemingly shows an inverse relationship between time spent on the exercise items and incorrect answers; the correct responses remain steady whereas the incorrect answers increase with more time spent. One possibility that would need to be verified with observations is that the student was distracted, resulting in more time logged and less accuracy.

Figure 4

One Student's Error Rates for One Exercise in *Structures* Section of Lesson 1

4.4.3 Exercise types: time. In examining the several types of interactive activities offered to students in the FOL course, on which activities do students seem to prefer to spend their time?

To analyze student behavior by exercise, we provide data in the same format as for the lesson sections. Table 5 shows the number of transactions, the range of time in seconds that the learners spent on each type of exercise, followed by the mean, median, and mode in seconds spent on a particular exercise type, throughout all 15 lessons.

Table 5

Number of Transactions and Time Spent on Each Exercise Type for All 15 Lessons

	Number of transactions	Range in seconds	Mean in seconds	Median in seconds	Mode in seconds
Audio Jumble	3,271	0-2,391 ^a	74.38	26	13
Audio Questions	1,518	0-7,095	221.35	142	159
Dictation	4,364	0-5,521 ^b	58.94	12	5
Listening	141	0-1,652	107.03	58	5
MC-image	286	0-719 ^c	681.15	34	19
MC-listening	2,847	0-6,137	82.52	38	0
<u>MC-listening.image</u>	405	0-5,942	155.68	66	45
<u>MC-listening.text</u>	36	0-197	54.3	48.5	47
MC-readingE	52	0-174	23.09	17.5	18
MC-readingF	638	0-1,844	75.56	41	0
MC-text	3,824	0-7,251	576.24	33	0
<u>MC-text.writing</u>	40	0-579	62.45	45.5	0
MC-video	1,195	0-1,909 ^d	69.16	42	20
Text Jumble	563	0-1,196	76.96	45	11
Text Match	1,066	0-856	20.81	8	4

^a Two data points were omitted from this exercise data, 63,840 (17.7 hrs) and 244,606 seconds (67.94 hrs).

^b One data point was omitted from this exercise data, 81,625 seconds (22.67 hrs).

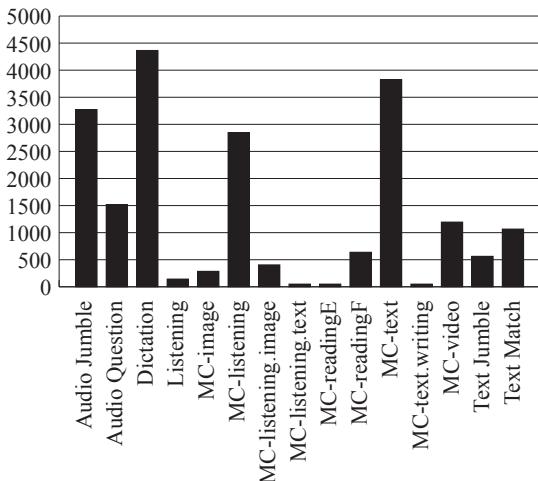
^c One data point was omitted from this exercise data, 179,503 seconds (49.86 hrs).

^d Two data points were omitted from this exercise data, 149,134 (49.86 hrs) and 1,795,111 (498.64 hrs).

Figure 5 displays the number of transactions by exercise type.

Figure 5

Number of Transactions by Exercise Type

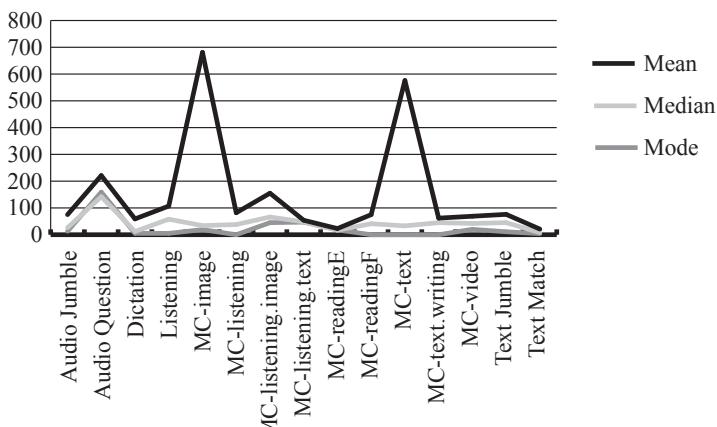


As shown in Table 5 and Figure 5, audio jumbles and audio questions were the exercise types most often used by students, and, indeed, these two exercises are found in *Communication 1*, the first section of each lesson. The next most frequently used exercise types were *Dictation*, found in multiple sections of the course, MC-listening normally found in the *Songs* section of the course, and MC-text also found in multiple sections.

The mean, median, and mode for all exercise types are presented in Figure 6. Similar to Figure 3 above, the mode shows low values and even 0 seconds for four exercises (see also Table 5).

Figure 6

Mean, Median, and Mode for Exercise Types (Expressed in Seconds)



Without observation or survey data, it is difficult to posit why students prefer some exercise types to others, but some observations based on the data can be offered. What stands out is the high participation rates for Audio Jumble and Audio Question. This result seems logical because these are the exercise types found in *Communication 1* where the students engage with the new lesson for the first time. The next highest mode values are those for any type of multiple-choice exercise involving visuals and/or listening files: MC-image, [MC-listening.image](#), [MC-listening.text](#), and MC-video, although the outlier is MC-listening. Overall, it could be that multimodal work is more interesting to online students. It must be noted that the Listening exercise type is a student choice of listening to sentences from the dialogues and vocabulary presented in *Communication 1*. Since there are no exercises for Listening, it could be that students skip over this page because they either do not see the value of this listening option and/or do not want to spend time on it. Notably, the exercises involving writing and reading receive the least amount of time from students.

4.4.4 Exercise types: error rates. In examining the several types of interactive activities offered to students in the FOL course, on which activities do students have higher rates of incorrect responses?

Table 6

Number of Transactions and Error Rates by Exercise Type for All 15 Lessons

	Number of transactions	Mean error rate	Median error rate	Mode error rate
Audio Jumble	3,271	0.85	0	0
Audio Question	1,518	2.42	2	0
Dictation	4,364	0.90	0	0
Listening	141	N/A ^a	N/A	N/A
MC-image	286	1.66	1	0
MC-listening	2,847	1.98	1	0
MC-listening.image	405	3.06	1	0
MC-listening.text	36	1.16	1	0
MC-readingE	52	0.98	1	0
MC-readingF	638	2.58	2	1
MC-text	3,824	1.32	1	0
MC-text.writing	40	1.75	1	0
MC-video	1,195	1.51	1	0
Text Jumble	563	1.87	0	0
Text Match	1,066	0.46	0	0

^aThe Listening pages have no exercises.

Figure 7 lists the mean, median, and mode of error rates by exercise type.

Figure 7

Mean, Median, and Mode of Error Rates for Exercise Types (Expressed in Seconds)

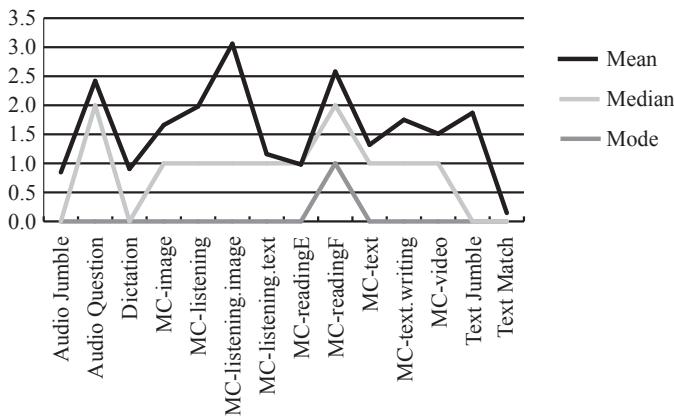
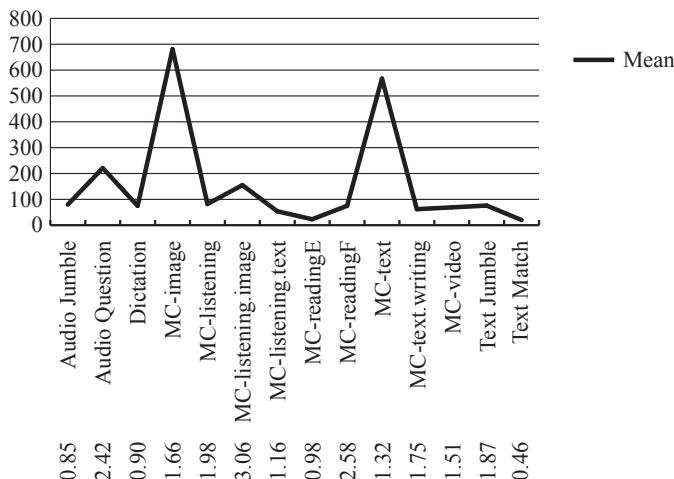


Figure 7 shows that where students spent the most time does not appear to correlate positively with low error rates. In fact, the opposite appears to be the case. Possible correlations with this descriptive data are difficult to assess. On the one hand, MC-image and MC-text show low error rates and high amounts of time spent. Conversely, Dictation and Audio Jumble show low error rates and low amounts of time spent. As a result, we are not able to propose a link between error rate and time spent for all students in all lessons (see Figure 8).

Figure 8

Mean Time Spent on Each Exercise Type and Error Rate (Expressed in Seconds)

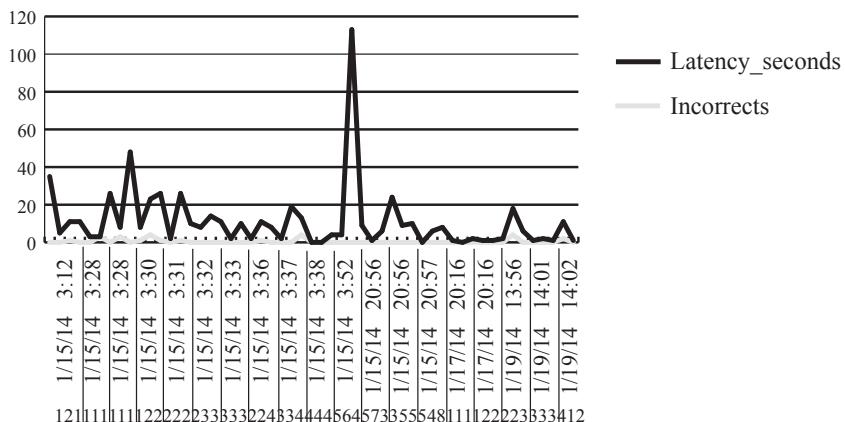


Note: The Listening exercise type is not included in these data because no student action beyond time spent is appropriate to the analysis.

To round out the findings and analyses and to underline again that this type of data may serve educators and researchers better if we review profiles of individual students rather than full cohorts of students, we offer data for one student. Figure 9 shows, like Figure 7, how difficult it is to make assumptions about student participation in an online course without supporting data from observations or surveys, for which at this point we can only propose hypotheses. The dataset in question is from the *Mots et expressions* section, a dictation exercise, in Lesson 1. Figure 9 shows the time that the student spent on the exercise and the number of incorrect answers that he/she gave. The X-axis shows both date and time of the student's work, and the numbers below the date and time represent the item number of the exercise, a total of 8 items.

Figure 9

Time Spent (in Seconds) and Number of Incorrect Answers Given by One Student in *Mots et expressions* Section of Lesson 1



This student attempted all eight of the questions in this dictation exercise. A cursory glance at the data, which show 57 total attempts at completing the dictation questions, might seem to indicate that the student made no progress in this exercise, spending differing amounts of time on a limited number of items and never achieving 0 incorrect. In fact, what can be learned from this graph is that the student worked steadily for 50 minutes, spending varying amounts of time on items 1-5 early on, and, after a spike in time on task, worked through the remaining items later that same day and then two days later and then again two days after that. Ultimately, in the second half of the work, the student made only 8 errors over the span of all 57 attempts at the exercise, as opposed to the first half of the work earlier on where he/she made 18 errors. While this is not proof of more time on task leading to fewer errors, it does provide insight into individual student performances.

5. Discussion

This study raised two issues for consideration to learn more about what students do when working in a language course online: time spent and error rates, albeit not in a correlated manner.

EDM provides views on student time spent in sections of an online course and different exercise types. Data culled from computer and software logs furnish information to instructors, course designers, and researchers that would otherwise be unavailable. Instructors need this information to help learners strategize their work online because all exercises provided in a course presumably add value to student learning. Course designers can use these types of analyses to see where students spend most of their time and thus work toward creating opportunities in which students can maximize their learning, be it by personal preference or forced progression through a course. Researchers can use this information to design studies around second language acquisition theories by using EDM data supported by observations and surveys.

The days of self-paced online language courses without instructor intervention are gone. If students still need instructors in traditional classrooms, it is reasonable to assume that they still need instructors in online learning. We need to know when students show a marked decrease in participation as they work through an online lesson. Decreases in participation could be the result of students ineffectively planning their work out over the course of a week, thus becoming fatigued or burnt out on the work. It could also be a question of educators and course designers asking if we really need students to complete each and every item in each and every exercise in an online course. In either case, educators must guide and offer strategies to students as they work through an online course, and course designers should take into account fatigue and burnout, not only throughout a full course, but also within a given lesson designed to take a specified amount of time.

Moreover, if some lesson sections and exercises show higher or lower error rates, designers should focus on creating exercises and items that are balanced throughout a course and that do not increase or decrease the student's workload unnecessarily. It may be that error rates are related to time on task—that will be for research to show. What EDM data show in this preliminary work is how error rates relate to lesson sections and exercise types. Using EDM to explore trend data for a class, a semester, or a course in addition to analyzing individual student data will only help us advance our online instruction efforts.

This combination of research—research undertaken with carefully organized student surveys intermixed with observational data on student course use—will improve the online language learning environment. Researchers, as Chapelle (2001) notes, can focus on the empirical evaluation of CALL tasks, asking questions with respect to Learner Fit and Impact. The most relevant questions from her work as related to this study are noted here.

- What evidence indicates that learners focused on form during the CALL task?

- What can learners' error rates tell us about how they use the course, whether they recycle learned material into free writing and face-to-face conversation?
- What evidence suggests that the targeted linguistic forms are at an appropriate level of difficulty for learners?
- Is there a pattern of error rates shown in the data evidencing items that are too easy or too difficult?
- What evidence suggests that the task is appropriate to learners' individual characteristics?
- With respect to error rates and time spent, are learners experiencing frustration which the data might provide evidence for, allowing educators to focus on when and where student preferences and/or abilities need to be gauged and adapted?
- What evidence suggests that instructors engage in sound second language pedagogical practices by using the task?
- What mechanisms are in place for instructors, through data, research, or better software logging, that indicate a need for intervention based on student difficulties with the material prior to testing?

Lastly, a call to action for educators and course designers should also include a call to researchers. This study did not examine the last section of FOL lessons, *Activités de synthèse*, where students must engage with lesson materials to create with language through synchronous written chats with their classmates and in face-to-face speaking tasks with a speaking assistant or instructor. Researchers, to support descriptive data available through applications like DataShop, could assess learner outcomes with recordings and chat logs, observations, and surveys, providing "empirical evidence for meaning focus ... of learners' interactions and language in CALL tasks and [learner] reports of how their attention is directed during the task" (Chapelle 2001, p. 85).

6. Conclusion

Poor student results in online language courses are sometimes attributed to student behavior; students are either in a hurry, distracted, or disinterested. However, as Clark and Mayer (2011) suggest, "mindless activity...does not support processing associated with the learning goal," stating further that "it is important to design practice ... in which learners are both behaviorally and psychologically active" (p. 254). Since course design is sometimes undertaken based on author assumptions—biases regarding how courses should be designed, appropriate questions of learner fit and language learning potential are not often asked (Chapelle 2001). Hwu (2003) writes that "the best way to look at the students' behaviors in [an online] environment is probably not by examining how long but how short they spent on a page and whether a page was accessed" (p. 18). This is one possible approach to examining online behaviors, but it could also be a false indicator of student performance if a student is performing well and simply does not need to spend a long amount of time on certain exercises. Knowing how to measure time

spent on a page could be more indicative and fruitful for this type of research, for example with respect to the amount of time required for videos.

Given that it may be course imperfections that are partially the cause of certain student behaviors, a lack of achieving learning outcomes should not be solely attributed to students. Data mining can help focus our queries on student online learning experiences more directly than pure observation; nevertheless, observation is necessary to support the results of data mining. Observational studies of student behavior when working online could clarify assumptions and help cross-reference what the data, like those presented here, appear to indicate. Conducting one-on-one discussions with students or viewing recorded footage of students working online could help us understand why students engage in certain behaviors.

One of the authors of this chapter often tells students, graduate and undergraduate alike, that she cannot teach without her glasses. She relies too much on her observation of facial expressions, physical behaviors, and indicators of comprehension or confusion, and she tries to anticipate questions as students formulate them. Teaching online language courses can be akin to teaching without glasses. Data analysis can offer a view into student learning and highlight where educators need to step in to guide students, where course designs need to be improved, and where researchers can focus future efforts to improve students' online experiences and learning.

Notes

¹ OLI can be found at oli.cmu.edu and the open and free courses are at <https://oli.cmu.edu/learn-with-oli/see-our-free-open-courses/>. DataShop can be found at <https://pslcdatashop.web.cmu.edu/index.jsp> and the PSLC at <http://www.learnlab.org>.

² We wish to formally acknowledge the work of six undergraduate researchers who worked with FOL data in spring 2014: Kairavi Chahal, Gabriel Vegh-Gaynor, Alex Wang, Jaclyn Wolf, Yiru Yao, and Julian Zhou. I also want to thank DataShop team members and their patience, especially Alida Skogsholm. A special thanks to Marc Siskin for his institutional memory of FOL and linking the teaching/learning team to the ‘computer-y’ team.

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Chapter 19

Understanding Online Interaction Through Learning Analytics: Defining a Theory-Based Research Agenda

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Abstract

Recent years have witnessed an influx of data mining concepts and practices in the educational field, including the rise of learning analytics (LA) for managing and predicting student success (Van Barneveld, Arnold, & Campbell, 2012). Although this big data trend is gaining popularity, it has only begun to surface in the field of applied linguistics in which an expanded knowledge of progress, performance, and problems would be enlightening for language teachers and learners (Heift, 2009). The use of LA for gauging language learners' online interactions and learning gains is thus a timely area of investigation; however, there is little agreement on which interaction data may be meaningful for understanding the complex interactions taking place online (Anderson, 2003). We therefore suggest that theoretical approaches can be beneficial in extracting meaningful data on language learners' interactions online and guiding a research agenda for the use of LA in an analytics-enhanced language learning context. Thus, we introduce a framework for guiding research on the use of LA in order to contribute to both CALL theory and educational practice.

1. Introduction

In recent years, new sources of data (e.g., social media, online course management systems, and Massive Online Open Courses [MOOCs]) have assisted in revolutionizing the way educators approach the language classroom (Fischer, 2012). In addition to evaluating students based on subjective delineations of their development, that is, holistically categorizing students into levels, such as advanced, intermediate, and beginner, language instructors can utilize these new data sources to extract objective information. Instructors, for example, can extract learning material usage and interactions within forums to gain a depth of knowl-

edge on students' behavior (Dyckhoff, Zielke, Bültmann, Chatti, & Schroeder, 2012). Thus, the emergence of these data sources means that data are becoming more readily available (Ferguson, 2012). That is, data are everywhere, and higher education cannot afford not to use the data to inform practice (Slade & Prinsloo, 2013). The real issue then is how to know what kind of data are more meaningful in the language teaching and learning context as well as how to make use of these data for optimizing teaching and learning. For this reason, researchers have been drawn towards learning analytics (LA), defined as "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environment in which it occurs" (Long, Siemens, Conole, & Gašević, 2011). Yet, in the field of applied linguistics, a framework for guiding research on the use of LA in the language classroom has yet to be determined.

In this chapter, we suggest a theory-based approach to conducting research with LA. The purpose of the approach is to guide researchers and practitioners in extracting appropriate data on learners' online interactions in order to understand learning gains, make predictions of learners' success, and inform decision making in an analytics-enhanced language classroom. We start with a brief historical overview of the term 'big data' and clarify several basic terms and concepts. We then turn to the emergence of LA and their value in the burgeoning MOOCs and other big data sources. This overview is followed by a discussion of how general learning theories and theories in second language learning can be used to contribute to research on LA in CALL. We end with a research agenda, taking into consideration the challenges and ethical constraints that will likely impact future practice and research with LA.

2. The Origins of Big Data and LA

The exact origin of the term big data is difficult to identify. Its prominence in computer science and statistics/econometrics literature, however, suggests an onset in the mid-1990s (Lohr, 2013). Early use of the term referred to not only massive amounts of data but also the handling of different types of data in new ways. Big data concepts have now expanded to learning and education and specifically to applied linguistics and CALL (Alvarez, 2014; Romero & Ventura, 2007). As a result, a diverse array of terms has been generated. Table 1 summarizes three of the most commonly occurring terms in education research.

Table 1
Summary of Key Big Data Concepts from Education Research

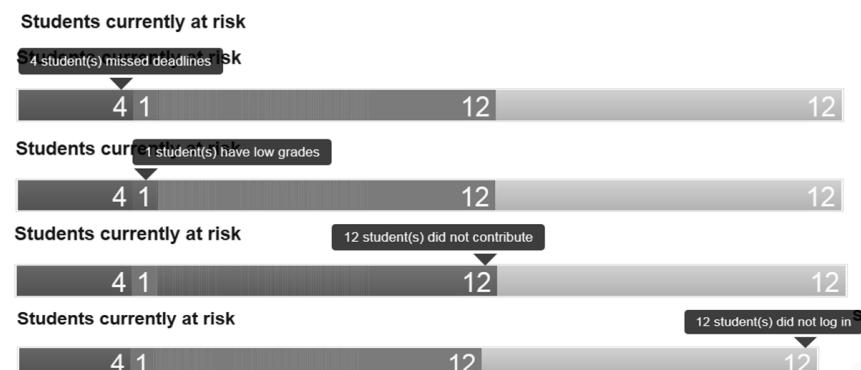
Term	Definition	Reference
Academic analytics	the practice of mining institutional data to produce ‘actionable intelligence’ at the institution level, often for administrative decisions	Campbell, Deblois, and Oblinger (2007)
Learning analytics	the measurement, collection, analysis, and reporting of data about learners and their contexts for purposes of understanding and optimizing learning and the environment in which it occurs	Long et al. (2011)
Educational data mining	the development of new algorithms and/or new models for exploring patterns in data	Bienkowski, Feng, and Means (2012)

Academic analytics are used to make decisions at the institutional level (Campbell et al., 2007), such as decisions about faculty productivity (States News Service, 2013). LA, on the other hand, have a narrower focus with a strict concern for the learner and improvement of learning (Long et al., 2011). Educational data mining (EDM), unlike LA, focuses on the development of new computational methods for data analysis (Bienkowski et al., 2012) that would allow for data to become more easily and readily accessible and, perhaps most importantly, actionable.

The focus in this chapter is on LA through which data are gathered from course management systems and student information systems in order to track learning as well as predict student success. For example, Figures 1 and 2 show analytics from the *Blackboard Learn* Performance Dashboard and Retention Center of a graduate-level research writing course for native and nonnative English speaking students. Figure 1 illustrates the overview status bar of at-risk students in the course. By hovering over each section of the status bar, tool tips appear that provide detailed information about each number.

Figure 1

Overview Status Bar of Students at Risk in a Graduate-Level Research Writing Course



The overview is followed by a list of students in the course and their performance in four categories: missed deadlines, grade alert, activity alert, and access alert (see Figure 2). As indicated by the dots, Student 1 is at risk in all four categories. The Performance Dashboard provides more details when each cell is selected. At any point, the instructor can add the student to a monitor list or notify the student of his/her performance through e-mail.

Figure 2

Example of an At-Risk Student in Four Categories of Performance

STUDENT ▲	MISSED DEADLINES	GRADES ALERT	ACTIVITY ALERT	ACCESS ALERT
Student 1	•	•	•	•
Student 1	•	•	•	•
MATCHING RISK FACTORS	<ul style="list-style-type: none"> 1 deadline has been missed by more than 0 day(s) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Missed Deadlines: 1 View late submissions </div> <div style="text-align: right; margin-top: 10px;"> ★ Monitor ✉ Notify </div>			
Student 1	•	•	•	•
MATCHING RISK FACTORS	<ul style="list-style-type: none"> External Grade is 25% below class average <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Total Grade: 62.33% <small>26.20% lower than class average of 88.54%</small> </div> <div style="text-align: right; margin-top: 10px;"> ★ Monitor ✉ Notify </div>			
Student 1	•	•	•	•
MATCHING RISK FACTORS	<ul style="list-style-type: none"> Activity in the last 1 week(s) is 20% below course average <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Activity: + 42% above average </div> <div style="text-align: right; margin-top: 10px;"> ★ Monitor ✉ Notify </div>			
Student 1	•	•	•	•
MATCHING RISK FACTORS	<ul style="list-style-type: none"> Last access more than 5 day(s) ago <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Last Access: 10 day(s) ago </div> <div style="text-align: right; margin-top: 10px;"> ★ Monitor ✉ Notify </div>			

As can be inferred from Figures 1 and 2, the goal of LA is to enable practitioners to tailor educational opportunities to each student's level of need and ability (Johnson, Smith, Willis, Levine, & Haywood, 2011). The analytics are also expected to prompt instructors to modify course content, intervene with at-risk students, and provide appropriate and effective feedback (Baker & Siemens, 2012). LA can be especially useful for educational practitioners who have limited time to conduct data analysis because analytics can play an important role in virtual classrooms and computer-supported education.

3. The Use of LA in MOOCs and Other Classroom Contexts

In 2012, elite universities began offering MOOCs with free enrollment and no prerequisites (Bali, 2014). As the popularity of MOOCs increased, many of the courses enjoyed an unprecedented large number of registered students, some reaching six digits in enrollment (Sandeep, 2013). However, nearly just as fast as the rise of MOOCs came the realization that completion rates were extremely low and patterns of participation were unequal (Clow, 2013). With statistical findings along these lines, research efforts have been directed towards understanding learners' online interaction, which is considered the most basic unit of learning data in virtual learning environments (Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014).

In one study, interaction data in the form of social network diagrams, communication activities in forum posts, log plots, and state transition diagrams were extracted to analyze engagement and performance of students in two MOOCs offered by the University of Melbourne (Coffrin, Corrin, de Barba, & Kennedy, 2014). Iterative analysis of the data identified three types of learners (auditors, active, and qualified) through their activities in the first two weeks. Students' activities and success in the first two weeks were then found to be associated with their learning outcomes at the end of course.

Similar use of interaction data in MOOCs was also valuable in other studies to understand student learning behavior (e.g., Seaton, Bergner, Chuang, Mitros, & Pritchard, 2014; Tabaa & Medouri, 2013). Tabaa and Medouri introduced *Learning Analytics System for MOOCs (LASyM)*, which was developed with a goal of offering useful information for MOOC stakeholders and providers to adjust course content and provide support to learners. Using data on learner engagement, learning behavior, and learner interests/preferences, *LASyM* was capable of identifying at risk learners at different stages of learning. While the use of LA has gleaned interesting data in the context of MOOCs, other e-learning contexts have also used analytics for understanding online interactions (see summary in Table 2).

Table 2
Summary of Selected Studies Using LA beyond MOOCs

Context	Platform	LA: Data collected	Principal findings	Study
Virtual learning environment supported face-to-face and online learning	Moodle: An open-source learning management system	Moodle log tool and a locally developed Moodle plugin: Virtual learning environment usage data logs	Different types of interactions are related to academic performance in courses delivered online but not face to face	Agudo-Peregrina et al. (2014)
Online, blended, and face-to-face courses	Blackboard Vista: A course management system	Course Signals (CS): percentage of points earned in course, effort, prior academic history, standardized test scores, and student characteristics	Faculty gained easy access to data. Students tended to be more proactive. Students, faculty and instructors had a positive response to CS.	Arnold and Pistilli (2012)

Virtual learning environment	L ² P: A learning and teaching portal used at RWTH Aachen University	eLAT (exploratory LA Toolkit): content usage, user properties, user behavior, assessment results	Usability tests showed that eLAT has met the key requirements in LA and EDM: usability, interoperability, extensibility, reusability, and data privacy. Pedagogical value is to be evaluated.	Dyckhoff et al. (2012)
Online, blended, and face-to-face courses	Tegrity: A fully automated social multimedia system (SMS)	Social LA: Social multimedia interactions	An SMS can help to disseminate knowledge and engage students in learning more effectively beyond the traditional classroom settings	Zhubadar, Yang, and Lytras (2013)

As shown in Table 2, analytics have also found their place in course management systems, also known as learning management systems. Verbert, Duval, Klerkx, Govaerts, and Santos (2013) recently reviewed 15 LA dashboard applications. The dashboards reviewed included *Classroom View*, *Moodle*, *LOCO-analyst*, *GLASS* (Gradient's Learning Analytics SyStem), *CourseVis*, *CALMsystem*, *TeacherADVisor*, *OLI dashboard*, *Student Activity Meter*, *Course Signals*, *Social Networks Adapting Pedagogical Practice*, *StepUP!*, *Student Inspector*, *Tell Me More*, and *TUT Circle*. The typical data tracked in these dashboards included time spent on the system, social interaction, use of documents and tools, artifacts produced, and exercise/quiz results. Although the data extracted from the applications focused on understanding online interaction, the analytics were generic and could be used in any course without attention directed to language learning in particular. LA that evaluate linguistic data (e.g., learner corpora and error analysis reports) would provide knowledge about students' needs, areas of concern, and language development.

While the interaction data in these studies have demonstrated interesting outcomes for understanding learners and the classroom context, "there is no consensus yet on which interactions are relevant for effective learning" (Agudo-Peregrina et al., 2013, p. 542) and no agreement on which interaction data may be meaningful (Anderson, 2003). This becomes a challenge for developers of all sorts of classes whose effectiveness is dependent on an understanding of the target users in order to design appropriate course materials and provide adequate instruction. The potentials for CALL research and teaching using LA therefore rely on understanding the interaction among learners, between learners and instructors, as well as between learners and computers. In the following section, we make suggestions for approaching LA research in CALL from a theory-based perspective. The goal of these suggestions are to help educational practitioners and language instructors make informed decisions about data acquisition and therefore gather relevant, meaningful, and actionable data for teaching and learning through LA.

4. A Theory-Based Approach to LA Research in Applied Linguistics

The relationship between second language acquisition (SLA) theories and CALL has strengthened throughout the years due partially to a call for theory-based inquiry in the field (Chapelle, 2009). Likewise, theory should be central when considering the use of LA in order to theorize the role of LA in educational practice. The ultimate goal for a theory-based approach to the use of LA thus mirrors that of CALL today, “the goal of marshalling professional knowledge in a manner that is useful for creating learning opportunities and demonstrating successful learning” (Chapelle, p. 93). The conceptualization of a theory-based approach is also largely motivated by the increasingly complex and linguistically rich environments afforded by advances in technology. Understanding what occurs in these environments would be best understood through a structured framework guiding research and practice in the area.

A solid theoretical framework can not only help stimulate research initiatives but also determine the appropriate use of LA in CALL and guide researchers in the collection of specific data for the attainment of research and pedagogical objectives. Thus, we find it necessary to define, identify, and structure a reference framework rooted in theoretical perspectives. Table 3 provides select theoretical approaches from various fields of inquiry that can directly apply to LA research in CALL. The first two columns list the fields and example theoretical approaches. The third column in the table provides an indication of the main focus of the theory, and the fourth column suggests data points that can be used for achieving research goals.

Table 3

Example Theoretical Approaches, Their Focus, and Example Data Points for LA Research in CALL

Fields of inquiry	Example theoretical approach	Focus of theory	Example data points
Psycho-linguistics	Interactionist	Language acquisition is facilitated through learners' engagement in meaningful interactions and noticing language during meaning-oriented tasks.	Social network diagrams Communication activity in forum posts Eye-tracking data
General human learning	Skill acquisition	Language as a skill is acquired through practice and a process of turning declarative knowledge into procedural knowledge.	Performance data on exercises/ assessment Time spent on the system Document and tool use Learner corpus data
Language in social context	Complexity theory	The process of language development is complex, self-organizing, dynamic, open, and adaptive.	Error analysis reports Keystroke logging

Language in social context	Language socialization	The evolution of learner's identities as a part of community of practice.	Social network diagrams Communication activities in forum posts Learner interest and preference Communications with instructor/peers
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The interactionist approach is one theory within psycholinguistics that is particularly beneficial for guiding LA research. From an interactionist perspective, learners engage in meaningful interactions that enable them to draw connections during meaning-oriented tasks. These interactions can be tracked through LA applications that provide social network diagrams; they can also be analyzed through communication activity in forum posts or discussion boards. As a result of these meaningful interactions, students are assumed to improve their noticing of grammatical structures (Schmidt, 1990, 1995). Measuring students' abilities to notice linguistic features, however, is quite complex in the online context but can be examined by gathering eye-tracking data and analyzing points of gaze and fixation rates (Anson & Schwegler, 2012). With more flexible, unobtrusive eye-tracking devices on the market, it would be possible to utilize eye-tracking data to investigate language learners' composing and revision behaviors. Such functionality is being incorporated in a newly designed automated writing evaluation tool with the use of eye-tracking devices at Iowa State University (Chukharev-Hudilainen & Saricaoglu, 2014). It is expected that the tool will provide valuable LA on students' writing behavior, thus providing informed feedback about writing with technology (Wengelin et al., 2009).

Another useful theory in the intersection between CALL and SLA is within the field of general human learning; skill acquisition theory (DeKeyser, 2007) focuses on language learning as part of the human learning process. From this theoretical perspective, language is a skill to be acquired through practice. The implications for LA research are numerous because the theory suggests an important role of practice in order to turn declarative knowledge into procedural knowledge. Practice can be measured through multiple forms of data: logging data, performance data, time spent on the system, and document and tool usage reports. In addition, learner corpus data would be a potential data point for analyzing language learners' practice of certain linguistic features.

A final field of inquiry comes from approaches to language in social contexts, in which two theories of SLA can be associated with LA research: complexity theory (Larsen-Freeman & Cameron, 2008) and language socialization (Schieffelin & Ochs, 1986). Originating from cognitive psychology as well as psycholinguistics, complexity theory explores the complex adaptive system that emerges throughout the development of a learners' language as a result of an interplay between cognitive and contextual factors. To examine this interplay, there are analytics that exist to aid in the extraction of objective measures of students' development. For

example, the tool *Turnitin* created by iParadigms (<http://turnitin.com/>) is an internet-based formative assessment tool that acts as a plagiarism prevention service. Along with originality statistics for detecting plagiarism, the tool incorporates an automated essay scoring engine by Educational Testing Service called *e-rater*. *E-rater* provides data on grammar, usage, mechanics, and style errors which can be analyzed to provide an indication of students' development in writing accuracy (Balfour, 2013). The uniqueness of *Turnitin* is that it can be incorporated into course management systems like *Blackboard Learn*, where other forms of LA are already easily accessible.

In addition, some real-time data related to linguistic input, such as keystroke logging, could also be very revealing of language learners' linguistic development. Leijten and Van Waes (2013) reported an empirical study using keystroke logging data to explore the composing process of 47 participants in their email and tweet writing. The rationale for employing a keystroke logging technique in their study was that a keystroke logging program such as *Inputlog* can track writing fluency to unveil the underlying cognitive processes during a writing task. Stevenson, Schoonen, and de Groot (2006) also used keystroke logging data, together with think aloud protocols, to study the revision behaviors of 22 Dutch junior high students when they revised their essays written in Dutch and English (as a foreign language). Manually coded keystroke logging data provided important information about their revision types.

In language socialization, the focus is on the construction of learner identity through participation in a community. Although some assert that classroom interactions may be specific to the classroom context (e.g., Kasper, 2001), others argue that interactional practices can socialize students to become competent classroom members and participate effectively beyond the classroom (for a short discussion, see Ritchie & Bhatia, 2009). Participation, however, is often stimulated by efforts of experts, such as classroom instructors, who help shape social roles, relationships, and identities by creating opportunities for interaction. Therefore, language socialization can be captured via constructing social network diagrams, extracting communication activities in forum posts, and analyzing affective features in learners' communication with peers and instructors. Such analytics can facilitate understanding student's abilities to build membership and of instructors' effectiveness in maintaining learners' membership.

The list of theories in Table 3 is by no means exhaustive. Other theories in learning and SLA, such as social cognitive theory and activity theory, can inform data collection and analysis using LA (Gray, 2014). However, in a review of the studies on the effectiveness of technology in the field of CALL, Chapelle (2013) posed a challenge for researchers to find out "where, when, why, and with whom CALL is effective" (p. 2). Thus, a discussion of theory-based LA research only lays a foundation for a research agenda. Consideration of possible challenges and ethical considerations is also worthy of discussion.

5. Challenges and Ethical Constraints for LA Implementation

Implementing a theory-based approach to research using LA could be an exciting undertaking in CALL. However, it is not quite realistic to assume a swift transition to the use of LA in pedagogical practices due to technological challenges (Boyd & Crawford, 2011), possible resistance from educational practitioners (Macfadyen & Dawson, 2012), as well as ethical constraints (Slade & Prinsloo, 2013). Technological challenges in implementing LA in educational institutions may arise due to a new digital divide caused by access to big data (Boyd & Crawford). For example, big-data-rich institutions could be further empowered with access to and use of big data for decision-making and thus benefit their students tremendously, whereas big-data-poor institutions may struggle with retaining their students at their universities and helping them succeed academically (Boyd & Crawford). Undoubtedly, the acquisition of commercially available LA may be constrained by local budgetary plans, and developing new LA for a specific educational context can be a daunting and time-consuming endeavor. Similarly, effective use of LA requires proficient instructional technology staff to provide technological support.

Acceptance of analytics-enhanced educational practices could be a challenge for instructors, who can resist the use of LA in the classroom for various possible reasons. For example, Ali, Asadi, Gašević, Jovanović, and Hatala (2013) conducted a survey of the Learning Analytics Acceptance Model with 22 LA users from three Canadian universities and a technology company. They found that the participants' usage beliefs, such as usability and perceived usefulness, along with pedagogical knowledge and information design skills, affected their intention to use LA. Therefore, instructors will need appropriate training on how to use LA and interpret the data efficiently and effectively. This training can then help limit teachers' feelings of being overwhelmed by the big data influx.

Given the extensive possibilities of accessing big data in education, ethics boards are facing more challenges in updating their guidelines for responsible use of and research on LA. For example, institutional review board offices or other similar ethical boards in higher education institutions typically follow the US Family Educational Rights and Privacy Act (FERPA), a law passed in 1974, to protect student privacy. Recently, there are some voices calling for an update of the FERPA to address the privacy issues in this big data era (Executive Office of the President & President's Council of Advisors on Science and Technology, 2014).

In responding to this urgent need for ethical considerations, Slade and Prinsloo (2013) proposed an ethical framework to guide responsible use of LA at higher education institutions. Their point of departure is that LA itself should promote moral practice in education. In addition, they stressed that LA should engage students as an agent and educated consumer of educational data for facilitating students' learning. Following this line of thinking, Slade and Prinsloo advise that the predictive models used in LA should be interpreted with caution because student success is a "complex and multidimensional phenomenon" (p. 1521). With regard to ethical practices for the use of analytics, the researchers insisted that data col-

lection, use, accessibility, and privacy should be transparent. Specifically, they suggested three overlapping categories which call for special attention when LA are involved: (a) the location and interpretation of data; (b) informed consent, privacy, and the de-identification of data; and (c) the management, classification, and storage of data. These three broad categories help direct our attention to the following key questions: What kinds of data should be collected and how should we interpret the data? Who would benefit from LA and under what conditions? Are the educational data properly managed, stored, and protected in line with national laws? With the aforementioned challenges, constraints, and questions in mind, a research agenda within an evaluative framework for CALL will be helpful in guiding a beneficial evaluation and use of LA.

6. A Research Agenda for Future Exploration of LA in CALL

Beyond the concerns, challenges, and possible issues, LA has the potential to enable practitioners to increase their understanding of students' learning needs and to utilize that understanding to positively impact students' language acquisition. However, a framework evaluating the use of LA in applied linguistics and CALL has yet to be explored. Such a framework should on one hand take into account users' judgment of LA due to the many challenges and ethical considerations. On the other hand, empirical analysis should be conducted to determine the appropriateness of its use. One such framework that does just this was introduced by Chapelle (2001). The framework, which originates from concepts and practices in evaluating tests, is used to evaluate CALL materials. In our case, LA can be seen as a tool that provides opportunities for teachers to enhance students' language acquisition; therefore, it can be evaluated in a similar way as to other CALL materials with relatively parallel goals.

Chapelle's (2001) framework defines six characteristics from theory and research on SLA that can be used to conduct research on analytics-enhanced contexts. These are outlined in the first two columns of Table 4. The third column relates the criteria to potential theory-based approaches to LA research (for further discussion, see Chapelle, 2009), and the final column frames some general research questions based on both judgmental analysis and empirical evaluation of LA.

Table 4

Criteria for Researching the Use of LA in CALL, Relevant Theory, and General Research Questions for Exploration

Criteria	Description ^a	Theory	General Research Questions
Language learning potential	The sufficiency of LA for illustrating the degree of opportunity for beneficial focus on form	Interactionist approach, skill acquisition theory	Do the analytics capture and present sufficient data for understanding learners' focus on form? What evidence do the analytics provide that suggests the learner has acquired targeted forms?

Learner fit	The extent LA can provide evidence of learners' engagement with language under appropriate conditions given learner characteristics	Complexity theory	Is an understanding of individual learners' language development evident from the analytics? What evidence do the analytics provide that suggests the target linguistic forms are at an appropriate level of difficulty for the learners?
Meaning focus	The extent LA can demonstrate learners' attention to the meaning of the language	All theories except skill acquisition theory	Do the analytics provide data directed primarily towards learners' attention to meaning of the language? What evidence do the analytics provide that suggests learners' construction of linguistic meaning aids language learning?
Authenticity	The degree of correspondence in LA data collection and analysis between target language activities and tasks beyond the classroom	Language socialization	Do the analytics demonstrate a correspondence between target language activities and tasks beyond the classroom? What evidence do the analytics provide that suggests learners see the connection between classroom activities and outside tasks?
Positive impact	The positive effects of LA use on stakeholders	Language socialization	Will users of LA become more informed language teachers and/or learners? Will the analytics demonstrate/promote sound second language pedagogical practices? Will users have a positive experience with using LA?
Practicality	The adequacy of resources to support the use of LA in language classrooms	N/A	What kind of available LA or predictive models may fit the pedagogical goals of CALL? Are there any policies in place or measures taken to ensure transparency in data collection, management, analysis and storage? Is there adequate support to help users of LA utilize the tool in an effective way? Are the data from the LA tool sufficient to allow for the management and prediction of student success?

^aDescriptions adapted from Chapelle, 2001, p. 55

Together, the criteria, theories, and research questions aim to stimulate a working research agenda for future exploration of LA in CALL. The first criterion for evaluating LA in Table 4 is language learning potential, which pertains to the collection and analysis of data to measure the quality of interactions and practice. The second, learner fit, can be used to determine the appropriateness of using LA to provide data that differentiates between individual learner differences. The third is meaning focus, which involves an evaluation of whether LA can provide data on the extent learners are receiving rich input. Authenticity, the fourth criterion, refers to the match between classroom tasks and tasks beyond the classroom.

As previously described, data in the form of social network diagrams, communication activities in forum posts, learner interest and preference, and communications with an instructor can be telling of learners' membership in a classroom community. Longitudinal use of LA would be needed to determine the transfer of classroom concepts to competencies outside of the classroom. Positive impact—linguistic and nonlinguistic benefits—is the criterion perhaps worthy of the most investigation to evaluate the appropriateness of using LA in CALL. The main agenda is to determine whether LA can provide data to inform language teaching and learning, demonstrate and promote sound pedagogical practices, and stimulate positive experiences. The final criterion is practicality, the degree to which analytics provide adequate resources to support its use in language classrooms. Evaluating LA with these criteria calls for extensive empirical inquiry supported by theory-driven approaches.

7. Conclusion

Existing studies indicate a promising future for LA as a supplementary tool to gather and present data of learners' online interactions and ultimately inform both learning and teaching in various educational contexts. For CALL, the introduction of LA can provide an instrument to look into the challenges that practitioners often face when accounting for and seeking to understand students' language acquisition. Yet, as acknowledged by Dyckhoff et al (2012), "the technology to deliver this potential is still very young and research on understanding the pedagogical usefulness of LA is still in its infancy" (p. 58). This is especially true when it comes to language learning, which attracts various theoretical approaches to account for the complex interactions taking place online. The proposed theory-driven research agenda and the evaluative criteria for the exploration of LA in CALL bring these theoretical approaches to the foreground as a guide for implementing LA and furthermore the understanding of learners' online interaction in this digital age.

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