Co-Navigating Mobilized Student Inquiry Across Multiple Contexts

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Abstract: This study traces the learning trajectories of secondary students who conducted inquiry projects based on their personal interests. The study conceptualizes the activities, practices, and tools associated (and not associated) with the inquiry projects within the *learning lives* of the student participants. The university researchers and the classroom teachers were active participants who assisted the students; shared their own *learning lives*; and provided resources, tools, and opportunities that helped shape the students' inquiry projects. The analysis features a *co-navigation* (with the researchers, the teachers, and the students) of learning trajectories across multiple contexts and social interactions. Findings reveal the agentive ways students took up and cast aside opportunities and artifacts in unexpected, yet fruitful, ways for the development of their inquiry projects. The paper concludes with implications for the design and facilitation of student inquiry across multiple contexts.

Major issues

The purpose of the study is to understand the divergent and agentive ways students co-navigated the learning trajectories related to an inquiry project. We use the term *co-navigate* rather than follow or trace in relationship to their learning trajectories because the university researchers and the teachers were both involved in the design of the learning opportunities; the facilitation of the inquiry projects across contexts, and the mapping of the learning trajectories across time and student-produced artifacts. The research study was conducted with and alongside the participants, and the data analysis serves as a partial reconstruction of the learning trajectories we co-navigated as a group. Our objective is to represent the participants' learning in the ways they agentively wove together learning opportunities and resources across activity in the classroom, the library, the hallways in between, and various locales in the community, including their homes. This study intentionally disrupts classroom-as-container discourse and constructs (Leander et al., 2010) to consider how students weave different contexts together (and break them apart) to chart a learning trajectory within their *learning lives* (Erstad, 2012). We share with other researchers the goal of tracing learning across multiple contexts "as a means to generate new knowledge about the borders and edges of different practices and the boundary crossings these entail in the learning lives of young people" (Erstad, et al., 2016, p. 1).

Potential significance

Our approach to facilitating student inquiry projects based on their personal interests stems from two main arguments about designing and supporting learning opportunities for youth. The first argument is that learning opportunities can be designed to connect multiple places and spaces of learning (e.g., Ito, et al., 2013). We intentionally seek to disrupt the notion that learning is limited to the attainment of isolated skills within classrooms. From our perspective, youth are engaged in complex mobilities and trajectories that establish relationships between the different physical places and virtual spaces they navigate when learning and establishing/maintaining social relationships. We draw on Leander and his colleagues (2010) framing of mobility as encompassing: physical mobility, the embodied movement from place to place; virtual mobility, the use of technology and media to build social connections across time and space; and educational mobility, the distribution of learning opportunities across people, tools, and learning environments. Additionally, our aim is to understand how learning takes shape in different ways in distinct places (e.g., classroom, playground, corner store), but we are also interested in supporting learning across these places in terms of what adolescents bring along with them from place to place, as well as what learning is supported and brought about in those places.

The second argument is that learning opportunities should be oriented toward the lived experiences of people as they grapple with the social complexities that shape their lives (Bruce & Bishop, 2008). Our goal is to work with students on inquiry foci that they consider relevant to their lives. We argue that inquiry projects as learning opportunities should begin with an orientation toward issues that are relevant to youth and eventually build toward issues that impact others. Therefore, our approach to inquiry is conceptualized not only as a learning opportunity for an individual, but also as a learning opportunity that involves many people who share their lived experiences and collaboratively identify issues that are collectively considered to be relevant. To support learning opportunities such as these, we argue that youth should be conducting inquiry alongside people of a range of ages,

diverse lived experiences, and different life trajectories and mobilities. This argument further highlights the inherent limitations of learning opportunities that only involve youth of a certain age or school grade level.

Theoretical framework

The study is informed by a *learning lives* approach (Erstad, et al., 2009) that considers the longer (life-long) and broader (life-wide) learning trajectories that young people are involved with as they move within and across different social settings. This perspective eschews the conceptualizations of learning and the enactment of social and literacy practices as contained exclusively within imagined geographies such as classrooms (Leander, Phillips, & Taylor 2010). As a generative alternative, this study considers how learning and the enactment of social and literacy practices are both brought along with people and brought about in particular sites along trajectories that are most often only apparent in hindsight.

The *learning lives* approach to a broader conceptualization of learning is based on two interrelated sets of theories: socio-cultural learning theory and social practice theory (Erstad, 2012). Socio-cultural theory accounts for the relationship between the mental functions of people and the social, cultural, and historical situations in which, and tools with which, people take action. In particular, this approach identifies mediated action as the unit of analysis in consideration of how people exercise agency and take action with mediational means within and across contexts (Wertsch, 1998). However, these mediated actions aggregate over time into social practices that are shared among people within and across contexts (Scollon, 2001). Therefore, this approach considers mediated action on the micro level and social practice on the macro level (Scollon & Scollon, 2004). These constructs are particularly generative for conceptualizing what the social and learning significance of particular mediated actions within and across contexts and for how social practices are related to one another within a nexus of practice, unencumbered by assumed social, physical, virtual, geographic and spatial boundaries (Rish, 2015; 2017).

Methodology

We are referring to the hybrid methodology used in the site as *co-navigation*, as we attempt to reconstruct and represent the learning trajectories that we navigated alongside the students in the study. The metaphor and particular analytical methods of navigation are derived from nexus analysis (Scollon & Scollon, 2004) and the transliteracies framework proposed by Stornaiuolo and colleagues (2016). Nexus analysis is an ethnographic method that involves three recursive analytic activities: engaging the nexus, navigating the nexus, and changing the nexus in future iterative phases. Engaging the nexus of practice accounts for the roles of the researchers and the teachers in the design of the learning opportunities meant to bring about a nexus of practice that will support student inquiry. Within this phase of data analysis, the history of the participants is considered in terms of the practices they bring to bear on the design of and participation within the learning opportunities. The researchers had worked with students on inquiry projects before, the teacher had facilitated the inquiry projects in previous years, and the students had completed comparable tasks before. All of these prior experiences inform how the people involved with the student inquiry engaged the nexus of practices at work. The second phase of the analysis is navigating the nexus, or as we are calling it, *co-navigation*, which involves mapping the

> cycles of the people, places, discourse, objects, and concepts which circulated through this micro-semiotic ecosystem looking for anticipations and emanations, links and transformations, their inherent timescales, and to place a circumference of relevance around the nexus of practice. (Scollon & Scollon, 2004, p. xx)

We consider this phase of the data analysis to be *co-navigation*, because as researchers, we did not make these considerations and decisions absent from the participants. Rather, as a point of emphasis, we privileged the participants' (both teachers' and students') understandings of what was relevant within the nexus of practice.

Within the *co-navigation* analytic phase, we also found the transliteracies framework to be helpful in naming and following mediated actions and practices within and across contexts (Stornaiuolo, Smith, & Philips, 2016). In particular, we have found the concept of emergence to be helpful for accounting for (or not) the "indeterminacies of meaning making across interactions" and for allowing "the unprecedented, surprising, and meaningful to emerge in observations of human activity without predetermined and text-centric endpoints of explanation" (pp. 10-11). As the nexus is co-navigated, there is a risk of dismissing or misunderstanding ephemeral practices (Pahl, 2002) and proto-practices early in ontogenesis.

The third phase of changing the nexus accounts for the mediated actions and related social practices that are enacted to change the linkages within the nexus. Change is a constant process; therefore, this phase of the analysis is not considered to be tertiary, but rather an ongoing recursive and iterative phase of analysis.

The focal data of this paper include three students from each school and their learning trajectories, derived from video recordings, audio interviews, field notes, and teacher-provided and student-produced artifacts (digital and print). Student and teacher histories with inquiry were constructed with retrospective interviews. Data collection involved capturing activity with video and audio recorders while working alongside students as the conducted their inquiry in the classroom, the library, and the hallways in between.

Research participants and multiple contexts

The multi-sited study was conducted concurrently in two different high schools (one urban, one suburban) during an academic semester. The student inquiry projects in both high schools were initiated by English teachers and were designed to allow students to explore an issue they were interested in learning more about and/or an issue they felt passionate about in the world. The issues identified by the students within the inquiry projects varied vastly, changed frequently for some students, and gained complexity and nuance over time for most students.

Each English teacher planned the instructional unit separately. Though, they knew each other and had both taught in the same building in the past, they were not in contact during the inquiry projects (purely due to time constraints). The English teachers each had a different way of structuring and supporting the students' learning that included drawing on previous iterations of the student inquiry project to adapt and orchestrate a series of learning opportunities with accompanying artifacts (e.g., handouts, graphic organizers, brainstorming documents) in consultations with the university researchers.

At the encouragement of the researchers, both English teachers incorporated options for students to collect their own data on their focal issue, in addition to the published research literature they were locating and reading. The researchers facilitated learning opportunities wherein students created online surveys and semi-structured interview protocols. The researchers and the teachers supported the students in the design of their survey instrument or interview protocol and the interpretation of the data they collected. The students were also provided guidance by the researchers on ways to use the data they collected in relationship to the published research they were gathering within their findings of their final papers and presentations.

In brief, the students' learning trajectories variously and divergently wove together classroom and library learning opportunities; artifacts designed to organize the inquiry; online informational resources; collected data; and conversations with peers, family members and other people in the community.

Findings

Tentative findings for six focal student participants (three from each high school) demonstrate the divergent and unexpected learning trajectories related to the inquiry project. Each student wove together contexts of learning in ways that were shaped by their histories and social relationships, but also in ways that were informed by their needs in the moment for moving the inquiry project forward. Though each teacher carefully designed a sequence of learning opportunities, each meant to build on the one prior, the six focal students did not all demonstrate participation and uptake in those learning opportunities as designed. In fact, some of the learning opportunities were revisited when they were considered to be relevant by the students, and other learning opportunities were either not completed or the participation was attributed to "going through the motions" or "only for the grade." For some of the students, the most salient learning opportunities were those afforded by the data collection and/or interviews, indicating that some of the student inquiry projects were bolstered by involving more aspects of the *learning lives* of students.

A full articulation of the findings demonstrates how moments of emergence that were initially overlooked by the researchers and the teachers as not directly related to the development of the student inquiry project were either some of the more salient moments that supported the students' inquiry or held meaning for the student that transcended beyond the purposes of the inquiry project (e.g., interviewing a family member about an inquiry issue and gaining a better understanding of the family member as a result). The findings demonstrate how the inquiry project unfolded as a nexus of practice, but for some of the students this nexus was interrelated and linked with purposes and practices that extended beyond the project. This consideration allows for a fuller understanding of how an inquiry project based on personal interests works within the *learning lives* of students.

Implications

The focal students in this study demonstrate the agentive and unpredictable ways that young people weave together contexts of learning. The focal students wove together learning opportunities afforded by instructional time in the classroom, online resources and social interaction, conversations with peers in official and unofficial places and spaces, and social interactions that accompanied the online survey data collection and semi-structured

interviews. These examples expand our imagined geographies of learning to include moments and conversations that otherwise may be overlooked or dismissed in the *learning lives* of youth.

The focal students in this study also demonstrate the participation and learning trajectories that are not wholly accounted for by the sanctioned learning opportunities they are presented with and often disrupt the intended timescale of instructional planning. Some but not all of the focal students completed project-related tasks within the suggested times. However, others navigated learning trajectories that leveraged learning opportunities at times other than when they were meant to fall in a sequence. These examples help us consider the assumed linearity in instructional design and value the examination of the actual learning trajectories that students create in relationship to the instructional design.

The focal students also demonstrated ways with which they negotiated among the practices at work within the inquiry project. Often, the practices that students brought along to learning opportunities were not the ones supported there, which required negotiation on behalf of the students, the teachers, and the researchers. How students negotiated among these practices within the nexus that linked together the inquiry project helps us understand how students shift practices across time and context, beyond simplistic notions of transfer.

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