

Teachers Collaborating with Wiki: The Impact of Professional Status, Language, and Age

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Abstract: Research indicated that Wiki-aided teaching has many advantages if supported by appropriate pedagogy. The present study examined the effect of this environment on the learning process during an M.Ed literature course for a multidisciplinary group of Jewish and Arab teachers in Israel. The findings were derived from the Wiki data, from learners' written and oral feedback regarding the experience, and from the lecturer's reflective diary. Although the learners' and lecturer's satisfaction was high, since the Wiki framework contributed to the learners' interest, involvement, and depth of their investigation, yet self-confidence in language use, cultural learning habits, age and professional status affected the learners' performance.

This article is about the use of the Wiki technology as an alternative platform for the construction of a shared interpretive space (Sumara, 2002) for the study of literature in the context of an M.Ed program for experienced teachers. It examines the data from the point of view of a teacher educator, investigating the experience of her teaching with the purpose of both improving her work and of contributing to the accumulating knowledge regarding the use of Wiki in professional development programs for teachers.

Theoretical Background

The Wiki Environment in Educational Settings

The Wiki platform is an environment enabling cooperative and collaborative learning, each participant being permitted to write, add, edit and alter any text written within its framework (Leuf & Cunningham, 2001). In this sense, Wiki's features create a "low risk" editing environment (Wang & Beasley, 2008), providing a multimodal and hypertextual writing platform, transparent to all readers. Studies examining Wiki-aided teaching found that this environment has many advantages. It fosters constructivist learning, as well as collaboration and interaction among the students themselves and between each student and the teacher. The knowledge constructed by students is made available to all the participants in the course for study and evaluation (Morgan, 2004; Watson, Boudreau, York, Greiner & Wynn, 2008). Moreover, it appears that the level of investigation by students using the Wiki platform improves, due to their being exposed to appraisal by their colleagues and others (Ravid, 2006). Recently researchers recommended the incorporation of Wiki as a platform for creating collaborative updated and course-oriented textbooks, in order to empower learners (Ravid, Kalman & Rafaeli, 2008). As Ruth and Houghton (2009) claim, Wiki is more than a tool, it is a way of learning.

Satisfaction with learning in the Wiki environment was found to be high, when supported by appropriate pedagogy (Ben-Zvi, 2007; Meshar-Tal & Tal-el-Hasid, 2006; Morgan, 2004). Studies dealing with learning language and literature with the help of Wiki show that this environment promotes high-level reading comprehension, a diversity of interpretations, and dialog among interpreters with various cultural backgrounds (Désilets & Paquet, 2005; Faranbaugh, 2007). It also increases writers' awareness of the effectiveness of critique in improving their written products, their meticulousness regarding spelling and syntax, and their sensitivity to different context-dependent modes of writing (Wheeler & Wheeler, 2009).

Researchers reveal that the success of educational Wiki-based learning projects or their failure depends on many factors; indeed, the same researchers may sometimes report success and at other times describe difficulties and discontent (Wang & Beasley, 2008). It was also reported that the learners' attitude towards Wiki and their time investment in posting varies from one learner to another (Ravid, Kalman and Rafaeli, 2008; Robertson, 2008). Studies also showed that the specific discipline and its culture of study affect the success in Wiki-aided learning (Rick & Guzdial, 2006).

Culture and learning via interactive educational technologies

Culture influences its members' ways of thinking and interpreting (Branch, 1997; Matsumoto, 1996). When teaching with the aid of technological tools two cultural factors should be noted: effects of cultural attitudes concerning interpersonal communication, and the language and ways of coding and

decoding knowledge (Wild, 1999), as well as the effects of the learners' epistemological and philosophical perceptions concerning teaching and learning.

Effects of cultural attitudes - Researchers proposed a variety of models to explain the differences between cultures, for instance between individualist and collectivist cultures, cultures with high-level context-dependent communication as opposed to cultures with low-level context-dependent communication, as well as cultures capable of accepting ambiguity and those avoiding it (Gunawardena, Wilson & Nolla, 2003; Hall, 1966, 1976; Hofstede, 1986; Matsumoto, 1996). Different cultural codes, culture-dependent information processing and expression, as well as culture-dependent networks of relationships and norms of interpersonal communication, may cause participants various problems while studying in multicultural groups in social technological interactive environments such as Wiki (Gunawardena, Wilson, & Nolla, 2001; Hall, 2006). There are cultures (like western cultures) in which language is perceived as a tool conveying precise meaning, and other cultures (like the Arab culture), where it is perceived as a system of linguistic forms, arousing feelings and visual images. Thus, while one culture pursues functional, precise, explicit and unambiguous use of language, another prefers affective language, implicit and rich in imagery (Dwairy, 2006; Zaharna, 1995). For instance, studies showed that students from cultures avoiding ambiguity find online learning environments more frustrating than students from cultures accepting ambiguity (Downey, Wentling, Wentling & Wadsworth, 2005), and that students writing in a foreign or second language participated less and were less confident in their contributions (Yildiz & Bichelmeyer, 2003).

Effects of learners' perceptions concerning teaching and learning - Studies report that while developing their pages on Wiki, many learners find it difficult to cope with the task of knowledge construction owing to the norms they had become used to, with the teacher not only providing them with the required knowledge, but also determining the framework for its organization and presentation (Farabaugh, 2007; Wang & Beasley, 2008). Such difficulties become acute when students, partaking in a collaborative interactive multicultural learning group, are accustomed to traditional spoon-feeding ways of teaching and learning; they encounter tremendous obstacles in attempting to adapt to the self-directed environment (Alsunbul, 2001). The characteristics of academic culture, which honors ownership of knowledge and copyright laws, were also found to affect activity in the Wiki environment; they minimize learners' willingness to allow peers to edit their Wiki pages and their own willingness to evaluate other students' work (Lindsey, 2006; Wang & Beasley, 2008).

Educational technology and teachers' development - Research on teacher education and educational technology including Wiki is growing rapidly. The teachers' attitude towards the benefits of technology for everyday school instruction is a crucial factor affecting technology implementation (Becker, 2000; Cuban, 2001). If the experience of learning with Wiki undergoes reflective processing and is integrated in the teachers' curricular thinking, it may be translated into effective use in the planning of teaching and in sharing experiences with colleagues (Darling-Hammond, Banks, Zumwalt, Gomez, Gamoran Sherin, Griesdorn & Finn, 2005). A positive experience of the use of the Wiki technology in teacher education programs will hopefully encourage teachers to subsequently use Wiki in their teaching.

The current study focuses on the impact of learning with Wiki on the process of the learners' writing and editing of their contributions as a result of a collaborative activity, within the framework of in-service M.Ed studies at a college of education in northern Israel.

The Study

Course Context

The M.Ed program of multidisciplinary instruction is intended for experienced teachers from Arab and Jewish schools from the northern periphery of Israel. The Arab and Jewish sectors in Israel have separate elementary and secondary educational systems, each one of them having its own language of instruction (i.e., Arabic, Hebrew). Only in higher education are Jews and Arabs engaged in multicultural encounters, sometimes in very conflictual political contexts. Studies examining the integration of Arab students in colleges and universities where the language of instruction is Hebrew, found that Arab students had to cope not only with high level and academic Hebrew, but also with reading material in English, teaching methods demanding more independent study, and more free and open relationships between students and between them and their teachers (Al-Haj, 1996; Peleg & Raslan, 2003).

Course Participants - 19 participants took part in the course under study, 9 Arab teachers and 10 Jewish teachers. Most teachers were women (typical of the state of the profession in Israel). Their ages ranged from 26 to 56 years, while half of them were between 41 and 55 years old. The teachers' professional experience ranged from three to dozens of years. Twelve of the teachers were teaching in

primary schools and the rest in secondary schools. Only seven of them had studied literature for their B.A. degree. None of them had previously read the novel studied, nor had any experience of study in the Wiki environment. The affiliation of the group's members to Arab or Jewish society, their different mother tongue (i.e., Arabic or Hebrew), were the salient cultural factors distinguishing between them. As for other factors, such as age and professional identity, the participants had much in common.

Aim and Content of the Course - The aim of the course under study (14 weeks) was to engage the learners in an encounter with world literature (Cai & Sims Bishop, 1990), and to build up a group database about the novel *The Day Lasts more than a Hundred Years* by Chinghiz Aitmatov, sharing historical, geographical, cultural, and literary knowledge, as well as individual and group interpretations. The assignment was to write an entry about a broad topic in the novel, relating it to entries written by other colleagues, complementing or expanding them. Writing on the Wiki platform evolved alongside 10 weekly face-to-face lessons, lasting 90 minutes each. (In the other four weeks there were no F2F meetings.) Blended model of teaching & learning was preferred to reduce the difficulties of adapting to Wiki-based writing, and to enable whole group F2F discussions of the novel and the written products. The learners were also asked to respond to their colleagues' entries on the 'discussion board'. The writing process continued until a month after the end of the course sessions, altogether about five months. No specific guidelines for content, style and organization of the entries were provided, in order to give the learners freedom with respect to their style and interpretations.

Research questions

This paper focuses on the development of the written products on the group's Wiki database.

1. What was the pace of the entry into activity in the Wiki environment and which factors affected it?
2. What steps did the learners take and which strategies did they employ in their writing when given free rein to carry out literary interpretive tasks in the Wiki environment?

Data Collection and Analysis

The data were derived from three main sources:

Data provided by the Wiki platform: (a) The entries written by the teachers; (b) The remarks on each entry, written on the discussion board; (c) Data provided by the history of each entry regarding the number of posts, changes and editing operations made.

Data derived from the teachers' reactions: (a) The teachers' remarks in the course of the lessons, noted down in the lecturer's diary; (b) Feedback reports written by each teacher about his/her experiences; (c) The transcript of the discussion that took place during the summing up of the Wiki-based experience.

Data from the lecturer's diary: The lecturer's own notes about (a) teachers' remarks, (b) her conversations with them, as well as (c) the phenomena and problems identified by her during the course.

The Wiki pages' history boards were analyzed in order to learn about the teachers' pace of writing and editing throughout the course. The written entries were surveyed for the number of linkages made by the teachers at three points of time – during the first version, the final one and an in-between version. Utilization of linkages to their peers' entries (and/or other Internet sites) implied teachers' adjustment to some of the norms of writing in hypertextual environments as well as their familiarity with peers' products and contributions. The discussion boards were examined to identify the contributors and the topics discussed. Learners' responses, collected throughout the course and derived from their feedback pages and the final discussion, were categorized according themes concerning participants' (a) experiences of success, (b) apprehensions, (c) difficulties, and (d) ways of coping with these difficulties. Learners' responses were used to investigate the considerations they had in mind and to explain phenomena, related to features characteristic of the Wiki platform. The lecturer's diary assisted her in recalling her reasoning regarding the learners' difficulties, the phenomena mentioned in their statements, and the evolvement of the writing throughout the course.

Findings and Discussion

On the whole, the teachers displayed enthusiasm and interest in the Wiki assignment, and gradually developed a Hebrew database about the novel. The teachers' feedback at the end of the course was positive, and all of them emphasized that Wiki had increased their involvement in the course. However, a closer examination of their strategies and activity called attention to some factors that may have impeded involvement and performance, and they should be addressed.

The Pace of Entering into the Activity

There were differences, related to teachers' specific cultures and languages, in the pace of their work and their readiness to write the opening paragraph of the entry, as can be seen in the following Table (see Table 1).

Table 1: Points in Time of Students' First Entrance into the Wiki Environment

Weeks of the Semester											
2		3		4-5		6-9		10-14		Later	
Arabs	Jews	Arabs	Jews	Arabs	Jews	Arabs	Jews	Arabs	Jews	Arabs	Jews
-	1	-	3	-	-	2	4	6	2	1	-

According to the participants' explanations, the slow entry into writing on the website was due to four main reasons: (a) less confidence in their knowledge of the language; (b) the felt need to become well acquainted with the text; (c); their habits of study, and (d) their attitude towards technology.

Knowledge of the language was mentioned repeatedly by four of the Arab teachers, their fear of writing in a faulty style, of making linguistic and spelling mistakes for all to see. When asked, the Arab teachers who were actually teaching Hebrew (6 out of 9 teachers) stated clearly they were more fluent and proficient in Hebrew academic writing than in their own language; however, when it came to exposing in public their writing in progress alongside that of their Jewish colleagues, they became less willing to participate in the activity.

Knowledge of the novel: Native Hebrew speakers read the novel fluently and did not wait for group discussions in order to continue reading, while eight out of the nine Arabic native speakers read the novel chapter by chapter, relying on classroom discussions to clarify the novel's content and the issues it raised. As a result they constructed their initial impression of the novel at a later stage of the course and started writing their entries later than most of their Jewish colleagues.

Habits of study: Three (33%) Arab teachers expressed frustration regarding the complexity of the task, which called for their own interpretation of a phenomenon in the novel or outside it, without any specific guidance regarding content or structure. Their explanations exposed their expectations that the lecturer would provide them with clear instructions, similar to those usually provided in an academic course regarding the final paper. The case of these teachers' slower and more cautious entry into the activity and the crutches they needed drew attention to the difficulty, caused by open assignments in the transparent Wiki environment as experienced by those who are not confident enough to cope with multidirectional and unstructured tasks. The Wiki technology transparency leaves no private space to those needing more time and guidance; rather it "exposes" them to the entire community. When the community of learners consists of self-aware experienced teachers, this exposure may mentally block some of them.

Attitude towards technology: Some older teachers who hesitated in their first steps explained their difficulties in their reluctance to use technology for writing.

According to the participants' responses, it appears that their mother tongue, age as well as learning habits were important factors, affecting the pace of entry into the writing activity.

Steps and Strategies in Writing

Using the word processor: About a third of all participants admitted that they wrote their thought first on the word processor, placing them on the website only when they were entirely satisfied with what they had written. This phenomenon may also explain why many entries began to appear on the website only in the last third of the semester. Seven teachers, Arab and Jewish, mentioned they were incapable of showing their work in progress to others. Seven others began writing only after composing several paragraphs on the word processor, but from this point on continued to use the Wiki, without resorting to the word processor again. Only four Jewish and one Arab teacher presented their work in progress throughout the course. During the feedback discussion at the end of the course all the teachers agreed with one of their colleagues' assertion that it was very strange and unusual to skip the private, intimate and reassuring step of working on the draft papers, and that it needed courage to expose partial products in public.

Most participants (70%) reported that their apprehension regarding their colleagues' reactions affected their writing: "I am a teacher; I evaluate and give grades to my students. Am I supposed to let others see a slipshod piece of my work? That's totally out of the question. It took me a relatively long time to accept that it is possible to post on Wiki ideas not properly thought through. You [the lecturer] must understand the radical change we had to undergo to participate in Wiki". Another student

remarked: “Writing is a very private matter for me. I can’t imagine exposing to others the process of the consolidation of my ideas”. Such remarks highlight the radical change in attitude required for work in the Wiki environment regarding the long-established habits that experienced teachers acquire in the course of their studies and professional development.

Duration of writing, editing and revising: The students not only started their task at different points in time, but also varied in the number of times they posted and edited their entries and in the duration of their Wiki-based writing periods, as is evident on the following Table (see Table 2):

Table 2: Length of time learners worked on Wiki and word processor assistance

Duration	Arab Learners	Jewish Learners	Assistance of word processor
4.5 Months	-	4	No assistance
4 months	2	4	Partial assistance
3 month	3	1	-"
1 month	2	-	Full utilization, with final editing work on Wiki
1 Week	1	-	Full utilization
3 days	-	1	Full utilization

Teachers who wrote directly on the website edited their entries fifteen to twenty times in the course of the semester, worked on it for long periods and expressed explicitly their great involvement in the novel and their enjoyment of the course. Others posted or edited their posts only 3 to 7 times.

Writing in a hyper-textual environment: At first the entries resembled the usual type of academic writing, the students almost totally ignoring the hypertextual features of the Wiki environment. The awareness of the need to adapt their writing to a hyper-textual environment developed slowly. An overall survey of the entries' development revealed that it took seven or eight weeks before the participants realized what a hypertextual environment could offer. It occurred only after (a) the entries had grown to several paragraphs each; (b) participants were explicitly instructed to read their colleagues' entries (c) devoting time to F2F review of several entries. At the same time the paragraphs in their own entries became denser and more in line with the definition of their topic. However, only small number of links was made by learners to external sites and the use of internal links was moderate (see Tables 3 and 4).

Table 3: Number of links to peers' entries related to specific points in time during the course

		No. of Links to peers' entries				
		0	1-3	4-7	8-12	13-14
No. of learners	Initial version	13	3	1	1	-
	In-between version	2	5	10	2	-
	Final version	-	4	11	3	1

Table 4: Number of external links related to specific points in time during the course

		No. of external links					
		0	1	2	3	4	5
No. of learners	Initial version	18	-	-	1	-	-
	In between version	11	3	3	1	1	-
	Final version	8	5	3	1	-	2

This phenomenon may be related to traditional academic writing habits and routines, and to difficulties to adjust to interactive hypertextual norms of writing. Reflections of six of the Jewish participants support this assumption.

Contribution of exposure to colleagues' entries and to discussion boards: All participants mentioned in their feedback that reading their colleagues' entries led them to consolidate their own and concentrate on the topic as defined. It enriched them with ideas and offered them new directions of interpretation. They had also found reading the conversations on the discussion boards between their colleagues and

the lecturer very interesting. These exchanges provided them with new avenues of thought as well as guidance and direction.

The written products as private property and the 'discussion boards' as private study rooms: Almost all the participants were sensitive to their ownership of their entry and their colleagues' interference. They perceived the written text they produced to be the intellectual property of the writer. Seven of them even signed their names at the end of their entries. They argued that exposing the entries to public view permits their colleagues to read, but not to edit them. In this case, the teachers' comprehension of the principle of the sharing of knowledge and of collaborative editing was not translated into practice.

The discussion boards served mainly as a space for the lecturer's comments rather than a shared space for discussing content and ideas among group members. Writing their own evaluation of a colleague's work on his/her discussion board was perceived - as one of the learners put it - like "an invasion of someone's private study"; therefore they tended not to write feedback. The feedback session revealed that the participants discussed the written products with their colleagues and made critical comments, but used other channels, such as F2F talks, phone or e-mail, channels that keep feedback as a reciprocal act, taking place between two people, not as a learning space for all participants.

Only seven women (5 Jews and 2 Arabs) responded to 8 of their colleagues' entries, expressing their interest, suggesting more references, discussing the contents, and elaborating on connections between the entries. Only three of the teachers who received responses from others continued to converse with them. Only 10 responded to the lecturer's.

Conclusions

The findings of this case study demonstrate that collaborative construction of a database about a literary work being studied on the Wiki platform enriches the learners' appreciation by providing them with diverse perspectives, and leads to a sharing of ideas and thoughts in the wake of their reading. The Wiki characteristics expose all the participants to a whole gamut of opinions, voiced throughout the course, while crossing cultural and social boundaries, owing to the possibility of reading the texts as they accumulate, and thus become acquainted with their colleagues' interpretations. Without the collaborative technological framework, many interpretations might not have been voiced.

A more cautious perusal of the results revealed that alongside the apparent success, certain limitations and problems must also be taken into account when teaching with Wiki in programs aimed at experienced teachers' professional development; the same is true in the case of multilingual and multicultural study groups.

The current study focused on the first experience on Wiki of a heterogeneous group of relatively experienced and older teachers, from different cultures and schools; it investigated the way they made use of the various devices available to them, to improve their written product. These learners had their own perceptions about a teacher's role and were liable to cling to their habits, and to act according to the rules and customs of the school in which they were working and the education system they were used to.

When such a group of experienced teachers, aware of their professional status, is to assimilate Wiki-based learning, it encounters obstacles, stemming from their habitual way of studying their teaching cultures (Feiman-Nemser, & Floden, 1986), as well as their entrenched perceptions of the appropriate relations between teachers and students and their differing roles in the classroom. The findings reveal that the issue of ownership of knowledge prevented colleagues from becoming involved in the editing of the written text in progress. Moreover, the perception that evaluation is the teacher's right and also his/her obligation to the learners, but not the learners' to their colleagues, reduced the social-constructivist value of the Wiki technology.

The sense of fellowship among colleagues is not conducive to mutual criticism in the presence of the lecturer, responsible for giving grades (see also Brett, Forrester, & Fujita, 2009). In this sense, Wiki-based learning calls for alternative ways of assessment, different from the traditional academic one.

The study reinforced previous findings, which maintained that the ways of writing in the Wiki environment differ from customary academic writing and apparently more than one exposure to Wiki is necessary for assimilating the Wiki ways of creating a network of connections (i.e., an 'intertext'), enabled by this technology. Most of the learners remained inside the pages of the "group's book" they had written about the literary work. This phenomenon may be attributed to learners' limited experience with hypertextual non-linear environments due to their long established habits of learning (Dziuban, Moskal, & Hartman, 2005).

The study found that learners in the Wiki environment, not writing in their mother tongue, feel diffident; here this factor was salient and affected the ongoing process of group learning, since a part of

the group, mainly the Arab learners, did not share with the others the development of their written product, but preferred to start writing later and base the text on previous attempts on the word processor. This resulted in the phenomenon that their late contribution was not discussed at the group's meetings, did not benefit from their colleagues' thoughtful comments and did not enrich other learners' products.

When the learners are teachers who have a high opinion of their ability to write and construct knowledge, the fear of exposure of their weaknesses may cause them misgivings about early posting on the website.

Limitations of the study: This study suffers from limitations characterizing 'messy' field conditions, since it is impossible to differentiate accurately among variables. Moreover, it tells a story of a single case study. Nevertheless, every case study of Wiki-assisted teaching may enrich our knowledge concerning the Wiki impact on learning in diverse contexts. Additional factors, such as the lecturer's way of teaching, the literary work chosen (its length, complexity and contents), as well as the academic backgrounds of each learner, call for further research in this field while using more modes of inquiry, such as in-depth interviews of the learners and their teacher.

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