

Language learning in a wiki: Student contributions in a web based learning environment

Linda Bradley¹, Berner Lindström², Hans Rystedt², Sylvi Vigmo²
linda.bradley@chalmers.se; bernier.lindstrom@gu.se; hans.rystedt@ped.gu.se;
sylvi.vigmo@ped.gu.se

¹Chalmers University of Technology, Sweden

²Department of Education, University of Gothenburg, Sweden

Abstract

Emerging social writing platforms offer possibilities for language learners to collaborate around joint assignments. One such environment is the wiki, generally hosting two prominent modes of usage, web pages and discussion forums. This study investigates software engineering students' use of a wiki as an integrated tool within the frames of a language course. The purpose of the case study was to investigate the student interaction in a student driven design setting and what the implications are for language learning in such an environment. The findings show that the two modes of interaction host primarily three types of activity, contributing and writing together, evaluating and peer reviewing, and arguing and discussing. These three activities convey different ways of collaborating and sharing text online. Once a group had chosen a mode for their collaboration, they tend to stay with it throughout their work.

Introduction

The changing communication landscape will likely affect the way we use and learn languages (Kern, 2006). One of the challenges in English as a foreign language (EFL) education is how to embrace the increasing number of available online tools for writing where frequently the lingua franca is English. What these tools offer are various ways of communicating through sharing information online and participating in co-construction of text. Thus, there are different modes of interacting connected to the technology within the tools serving different purposes for the users. One such mode is the chronological presentation of individual text, e.g. what is displayed in the format of forums and blogs. Another mode is the more transient type of writing in

sharing documents and text online which is jointly altered, displaying the most recent version of text, e.g. the open editing functionality in wikis (Leuf & Cunninghamn, 2001). It is common that wiki platforms offer these two main modes for users to meet; writing spaces in the form of web pages and discussion forums anchored on each web page (Augar, Raitman & Zhou, 2004). Scrutinizing the interaction in the two wiki modes is the objective of this study.

The purpose of this study is to investigate software engineering students' use of a wiki as an integrated element in an EFL course and the nature of the student interaction on the wiki. Engineering students are generally frequent users of online spaces and various forms of web based social software in addition to their engagement in their disciplinary courses at university. Thus, the focus of this study is scrutinizing the way the students make use of the wiki as a means to collaborate within their language course, what activities emerge and what these activities imply for language learning.

Research on wikis and learning

Research in the area of social writing platforms, targeting language learning is increasing. However, there are few studies within the area of language learning investigating the way students make use of a wiki as a means to collaborate (c.f. Arnold, Ducate & Kost, 2009; Kessler, 2009; Lund, 2008; Mac & Coniam, 2008), which is the specific interest for this study. In the previous ones, there are a few joint claims pointing out notable characteristics in these platforms. In an overview presented by Warschauer and Grimes (2007) discussing aspects of CALL, previous online technology was more engaged in "publishing" whereas more recent technology implies "participation" (Warschauer & Grimes, 2007, p.2). This step implies that users are now more part of producing content rather than viewing existing content. The shift in status for users moving from consumers of information to creators of contents on the web is discussed by Murray and Hourigan (2008), who highlight some common traces about blogging which can also be applied to other types of platforms, such as wikis. Another claim is the variety of multi-faceted topics presented online and the freedom of publishing ideas in a globally open environment. Furthermore, they argue that blogging is both individualistic and collaborative in nature (Murray & Hourigan, 2008). On the one hand, when users publish topics disregarding others and out of a community context, the blog is individualistic. On the other hand, when users work together and highlight the plurality of voices in the environment, it is more collaborative.

Wiki technology offers possibilities for collaboration, allowing text to be published and submitted to change by all its users. In studies of wiki technology used in education, the potential of web based writing environments is a common feature frequently brought up (Augar et al., 2004; Forte & Bruckman, 2006; Garza & Hern, 2006; Miyazoe & Anderson, 2010). This potential is expressed as opportunities for collaborators participating in joint writing projects. In a study by Augar et al (2004) for instance, wiki technology is introduced as a motivating factor to support increased online collaboration among students in an introductory university course. In another study by Forte and Bruckman (2006) it is pointed out that wikis offer a unique opportunity for student essay writing in a university writing course. Connected to the highlighted possibilities, one of the factors stressed is the simplicity in the wiki technology, such as the ease of use and access. The outcome of these studies generally mirrors a positive attitude to the possibilities available in the wiki as an open editing space, inviting anyone to become a co-editor.

Concerning design considerations brought up in the studies, there are different approaches as to how the collaborative efforts are designed within the educational environment. Some studies investigate wikis built similarly to the Wikipedia-type of environment where peer editing is performed by participants over the whole wiki on all web pages, resulting in a great number of iterations and new text versions (e.g. the networked level described in Lund, 2008). On the contrary, other studies are more focused on student production of text as a repository of information where spaces are designated for a specific purpose. Here, collaboration is not primarily a matter of altering the meaning of other students' contribution but to give suggestions and comments (e.g. Augar et al., 2004). This study is targeting the latter design variant, where students have designed and are focused primarily on their own group pages on the wiki.

The effects of introducing technology that involves peer learning activities imply moving the responsibility of giving and taking comments from the teachers to the students. Students consequently become resources for each other in their response work (Grant, 2006; Kessler, 2009), something which is also brought up by Lund & Smördal (2006) who point to the changing role of the teacher with the aim of informing pedagogical design of a wiki. Regarding students becoming responsible for the organization of their own learning, a few matters are brought up in the literature. Grant (2006) as well as Mac and Coniam (2008) raise the point that it is problematic to get students to view peer editing each other's contributions as useful when they are invited to participate and collaboratively create content on a wiki. Reasons given are related to the fact that school practices have a stronger impact on students than that of collaborating on a wiki as a joint production venture, since school traditions

have emphasized individual writing. The fact that students need to get used to collective ownership when writing, is raised in the analyses made by Lund and Smördal (2006) and Lund (2008). Investigating collective production patterns among wiki users is thus a noteworthy key point in the studies of joint student writing. Also, in a study of revision patterns in Wikipedia, Jones (2008) suggests that the combination of the overproduction of text edits that wikis encourage, together with the traditional focus on grammatical and stylistic training in school is a beneficial match, since the two systems balance each other out and possibly imply higher-quality texts.

Other common questions raised in the studies focus on coherence and accuracy in students' collaborative text production. Arnold et al (2009) conclude that students rarely revise existing peer content even though that was part of their assignment description. Instead, the students were more concerned with adding content and correcting mistakes in their own and fellow students' contributions. Mac and Coniam (2008) likewise point to the difficulties in getting students to alter fellow students' contributions. In their study, peer reviewing in writing was a novel concept for the students, aggravating the circumstance around such a practice. This is similar to what Kessler (2009) found, i.e. that students show reluctance to striving for total accuracy in an autonomous environment such as a wiki.

Language learning in a sociocultural perspective

This study situates itself within the sociocultural perspective. Accordingly, within this perspective, language learning is developed in social interaction (c.f. Lantolf & Johnson, 2007). According to Warschauer (2005) the central Vygotskian concepts for understanding CALL (Computer assisted language learning) are *mediation*, *social learning* and *genetic analysis*. As far as mediation is concerned, it implies that all human activity is mediated by tools or signs (Vygotsky, 1981; Wertsch, 1991) and that these tools fundamentally transform human action (Warschauer, 2005). This means that implementing technology for learning, e.g. an online space as a mediational means, can alter the flow and structure of the students' actions and learning. The next concept, social learning can help us understand how learners incorporate language of others (Bahktin, 1986; Linell, 1998). Thus, language learning is tightly connected to language use and it is based on participation in discursive practices, where a range of joint activities are recurrent themes in learning such as collaborative writing, discussions, argumentation and feedback. Web based technology, in the form of social writing platforms, lends itself well to interaction between users for educational purposes since they allow users to edit joint content

where they can share ideas and work with assignments together online. About the third concept, genetic analysis, it implies that CALL needs to be placed in a broader historical, social and cultural context in order for us to understand the significance of technologies (Warschauer, 2005).

From a language learning perspective, the relation between linguistic and communicative competence is pointed out (Hyland & Hyland, 2006; Kramsch, 2006). These traditionally adopted concepts can be understood as a distinction between a “formalist” and “functionalist” framework (Linell, 2001), where the former primarily concerns language system accuracy and the latter communicative content. These two concepts complement each other.

Research aim and questions

This study investigates the dynamics in student collaboration, focusing on emerging wiki activities. There is an interest in exploring how these activities take shape in language learning when students collaborate on topics coupled to their field of engineering. This study contributes to the area of technology in language learning in pointing at possible implications for educational use of wikis in language learning.

Arnold et al (2009) express the need for future research to investigate type of revisions and feedback patterns in wiki environments and that collaboration during the actual composition process has not been much researched. Also, Kessler (2009) suggests that it would be interesting if future research would explore the two modes on a wiki further, since the students in his investigation considered the discussion forum and web pages to be very different (Kessler, 2009).

The research questions deal with student collaboration in the two main modes of writing on a wiki, the web pages and the discussion forum:

- What forms of interaction can be seen there?
- What consequences for student interaction do the two modes convey?
- From this interaction, what are the implications for language learning?

Design

This case study involved third year software engineering students, enrolled in a seven week EFL course “Communication in English and engineering” at a Swedish university. There were 70 participating undergraduate students in the course who initially formed 28 groups with two or three peers in each for interaction on the wiki. Out of these groups, 14 chose to use the wiki for sharing text and discussing

information. There were eleven groups with two participants and three groups with three. These 14 groups form the basis of the data for this study.

About the education design, the wiki was introduced to the students as an interactive student driven online environment where they could extend their language learning situation beyond the physical classroom together with other fellow students. It was stressed that personal engagement was of utmost importance for a positive outcome of the wiki interaction. The explicit focus on active participation, located the responsibility with the students themselves, since the wiki activities were neither compulsory nor part of the grading of the course.

Initially, all students were provided with a link to the course wiki hosted at Wikispaces together with instructions of how to get an account in order to edit pages and create new pages on the course wiki space. The wiki was linked from the university LMS, hosting other course materials and resources. The groups were asked to name their pages with their own names or usernames and link their group page to the navigation bar in order to create their own space and make it visible for all users of the wiki. The students were asked about their previous knowledge of wikis and though the students were familiar with Wikipedia, only four students had produced content on a wiki previously. However, due to the nature of the student body of being software engineering students, they could start using the technology after only a brief orientation and they required very limited support during the course.

The wiki assignments were designed around three modules of the language course, where topical issues within software engineering would be discussed within the group, resulting in a joint text at a set deadline. The introductory theme brought up the new kind of culture served in a more modern package, discussing the transformation of styles from informal language into formal. The second module dealt with argumentation and rhetoric, as tools to adopt in productive professional skills. The third course module addressed critique writing and reporting on topical issues. After class the students had corresponding tasks presented on the wiki start page where they would continue the interaction after class on their group wiki space. The overall objective of the course was for students to work with their linguistic skills as well as their communicative and argumentative competences in writing and speech, targeting their ongoing bachelor's projects.

For the three course teachers, the wiki required little administration. The setting allowed any user to read text and discussion posts without being logged on. The users only had to log on to the wiki in order to make contributions on the web pages and discussion forums. The teachers did not intervene in the wiki during the course

apart from administering user accounts and posting instructions of assignments on the wiki start page.

Data collection

Central elements for the data collection of the wiki activities were the student contributions on the wiki. The focus of the analysis was mapping the student interaction in order to investigate the nature of the postings and what functions of the wiki that the students made use of. The two modes allow for two diverse ways of sharing content. The web page mode invites users to add, develop and revise content within a joint text area, which is the original idea with a wiki. The discussion forum mode on the other hand, implies that users write content and then make it visible next to previous contributions under threaded topics.

In order to track the student interaction on the web pages, the version handling of each web page, under the link history, provided all saved versions of interaction, chronologically listed, displaying date, time, author and changes made in the text by means of colour coding. The dark grey text (red on the wiki) indicates deletion, the light grey (green on the wiki) insertion of new text and the white text indicates unchanged text from the previous version (see Figure 1). This is from the web page created by 'Per', whose peer group is using his page as their group space.

The screenshot shows a wiki page titled 'Per' with a navigation bar at the top containing 'page', 'discussion (5)', 'history', and 'notify me'. On the left, there is a sidebar with 'Actions' (Join this Space, Recent Changes, Manage Space, Search) and 'Navigation' (a list of user names). The main content area shows a version history entry for 'Per' dated 'Mar 27, 2007 2:32 pm' by 'MikaelEmilsson'. The entry includes a 'Comment' of 'none' and 'Actions' such as 'turn off change highlighting' and 'show wikitext changes'. The 'Key' section lists 'Inserted Text' (light grey), 'Deleted Text' (dark grey), and 'Jump To: First Last'. Below this, the text of the page is shown with some words highlighted in light grey (e.g., 'download', 'nowadays', 'continuous plots') and some in dark grey (e.g., 'download', 'nowadays', 'continuous plots').

Figure 1. A version of text found on the web page version handling under history

The other area was the discussion forum belonging to each wiki page, where the postings are also listed in chronological order with potential replies under each subject. Apart from displaying the title, author and number of replies, number of views and date together with the last message are found on the discussion forum (see Figure 2).

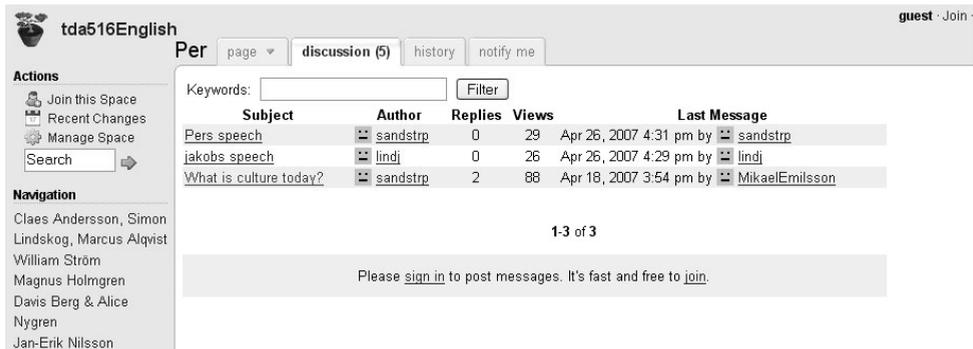


Figure 2. The start page of the discussion forum belonging to the same web page (Per)

The analysis of the wiki took place after the termination of the course. It was possible to follow the development of the student interaction from the first to last contribution. Thus, the focus for the investigation was what activities unfolded in relation to the existing wiki features and how tasks had been processed using the functionality on the wiki. These activities were framed both by the functionality offered in the wiki but also by what the students perceived as being language learning activities, i.e. how students performed and framed language learning tasks in this environment.

Results

To the first research question about the forms of student interaction on the wiki, the outcomes of the investigation show three distinguished activities on the wiki. The activities were found in the two wiki modes; the web pages and the discussion forum belonging to each web page. Some groups used their web page to share common information and text, whereas other groups preferred to use the discussion forum as their main place of interaction. Even though there is a trend in most groups that they tend to stick to a specific mode, there were groups who use both their web page and

discussion forum. However, the greater part of the interaction is found in one of the modes.

As far as the web pages are concerned, there were nine groups actively using the web page as their meeting space. By actively implies not only initially testing the functionality and then discarding it, but returning to the web page with further interaction, entering the different course tasks, gradually added on their web page. Out of the nine groups, five only used their web page and did not post anything in their discussion forum. In the web page mode, the most active group had 22 versions of text saved, from the first test of posting text to the most recently saved version by the time of the deadline. The average number of text versions saved by the nine active groups was six updates.

When it comes to the discussion mode, there were five groups using the discussion forum actively, taking turns posting text under different topics. Out of these five groups, four groups only started their web page in order to use their discussion forum and one group updated their web page four times, apart from using their discussion forum. The most active group using the discussion forum had 15 contributions posted on seven different topics. The average number of discussion postings from the five active groups was six contributions.

When investigating the interaction on the wiki the activities range from taking turns writing together, where students contribute and co-operate, to evaluating and peer reviewing text. Also, one prominent activity was that of discussing and arguing personal views. The interaction was in English apart from a few places on the wiki where students gave each other meta-information in Swedish when adding a comment targeted at fellow peers. These interactive activities will be presented in the following sections. Here, research question two, the consequences for student interaction in the two modes will be dealt with.

Contributing and writing together

The activity of contributing and writing together implies that students produce a piece of text each by taking turns in contributing to the process of writing a joint text. Students add their ideas to their group's existing text by editing the previous version of text. There are rarely any author comments between the versions written but just updates of the new version. This activity is found under the student web pages. By following the text construction as it is visualised in the version handling, it is possible to trace the text development, where new meanings are gradually constructed by the participants.

The following excerpt is from a student web page from a peer-group writing a text in the introductory module, discussing the culture of today. Excerpt 1 is the last part of a longer text preceded by four versions saved on this peer-group's web page. The text has been updated by one of the three peers of the group in question. The light grey (green on the wiki) is inserted new text and the dark grey (red on the wiki) is deleted text.

Excerpt 1

Saved by rth, Mar 27, 2007 2:20 am:

Let's look at it in another perspective. It ~~it~~ is very nice to easily enjoy things happening in the world through a medium like a ~~tv~~ TV, but that doesn't make people stop traveling. It is more like an addition to your own experiences. ~~I think the~~ The idea of the culture dying is wrong. ~~Culture~~ The culture that existed hundred years ago isn't the same culture that exists today and therefore it's safe to say that culture never dies, it merely changes. ~~The culture that existed hundred years ago isn't the same culture that exists today.~~

Excerpt 1 shows that the peer student has turned a personal view posted by a fellow student in the previous version, into a joint issue by deleting the personal pronoun in the expression "I think the idea" to modifying the text writing "The idea". The style has changed from being more informal and characterised by the view of one person, into representing a more general perspective that the group members have contributed to. Thus, modification of text elements by developing the contents may alter the genre. The activity encourages additive contributions and relatively uncritical acceptance of what others say. This is the case in the activity of contributing and writing together, where there is a lack of meta-discussion, commenting on individual members of the peer group.

As seen in excerpt 1, this type of activity is focused on both content and form based issues such as offering vocabulary alternatives, correcting grammar and style. Kessler (2009) calls for more studies attending to student initiated focus to form without the teacher being present, which can be seen in this wiki activity. In fact, the students are engaged in what is referred to as both functionalist work as well as formalist, which implies that both communicative context and language system accuracy are at focus (Linell, 1998).

Evaluating and peer reviewing

Another activity is when students take turns giving each other feedback in evaluating and peer reviewing co-written text. The nature of this activity of commenting is more of reasoning in character, irrespective of whether the focus of the feedback is on

content or language. This activity is found both in the discussion forum and as additional information posted on the student web pages.

Excerpt 2 is taken from the third module of the course, where students were asked to write individual critiques based on current topics, in this case public surveillance. The writing stage is preceded by a discussion of the theme and then followed by peer response, as seen in excerpt 2. This is representative of what is to be found under the discussion forum of a group's web page, allowing for views of single contributors to be shown. The excerpt is an example of response given to a student who has posted a thread, "My critique". The peer student reasons around the structure of the text in excerpt 2, suggesting improvements to be made.

Excerpt 2

andrjon re: My critique

You have a good structure where you bring up issues and comment them one by one.

Some small things though...

I reacted a little when I read the part "as everyone knows" in the second paragraph about obedience and changes in society. It felt like that was something that was obvious to all people, but atleast it wasn't for me.

Your third paragraph about how innocent people will suffer and also the fourth paragraph about "corrupted governments" did I not really recognize from the article. It felt a little like it wasn't something he focused a lot on. But perhaps it depends on your own point of view when you are reading it.

 Posted May 1, 2007 11:46 am - [\[delete\]](#)

As seen in excerpt 2, the feedback concerns parts that need development in the structure of the text in order to make the context more functionalist (Linell, 1998). In the first sentence the strengths of the author are enhanced and in the last two paragraphs issues to be dealt with are pointed out. Following this feedback, the author comes back with three more postings, where he develops the text based on suggestions offered by his peer student.

The next excerpt, excerpt 3, is taken from the same group. The other person has now posted his critique under another discussion thread and the roles are now switched when he gets his feedback.

Excerpt 3

illegitimate laws? HM? You should check the word.. also remove the commas in the same sentence in "existed he writes and gives credibility to the fact that peopel didn't accept them". Sounds better. I would re-write the whole sentence, it's weird and broken. Hard to follow etc.

 Posted May 1, 2007 11:14 am

The type of comment in excerpt 3 is both formalist and functionalist (Linell, 1998). It points at a form issue of removing commas and sentence structure to facilitate communication and argumentation. Turning to the peer-work to be found under the web pages, when students give response, it is focused primarily on form aspects and less on function and content. In excerpt 4, linguistic review is visible through the colour display, the dark grey text (red on the wiki) indicating deletion and the light grey (green on the wiki) insertion of new text.

Excerpt 4

We belive that it's not the new types of TV shows that has made people start ~~download~~ downloading to catch up when they ~~have~~ missed a couple of ~~episodes, or even whole~~ seasons. It is the new ~~technologys~~ technology that has given rise to this behaviour.

The modifications in excerpt 4 deal with two grammatical issues, the usage of the gerund 'downloading' and the choice and spelling of the noun 'technology'. Also, the peer reviewer added two items to the text; 'have' and 'episodes, or even whole'. Since the web pages do not naturally invite the user to write personal comments, attention is paid to more formalistically oriented comments and suggestions such as usage of vocabulary and expressions, grammar, spelling. Though, the peer-reviewing found on the wiki can be quite elaborate, not only pointing at problematic areas but also giving constructive suggestions, resulting in a rewritten text.

Arguing and discussing

The activity of arguing and discussing implies inviting another person into a discussion, to share and develop understanding and defining concepts. In this activity the focus is discussing a topic where text production and form based feedback is not a primary issue. This activity is found primarily in the discussion forums but also under the web pages.

Excerpt 5 is taken from a peer group of three students discussing the assignment from the introductory module. The first part of the excerpt is the last piece of text written by one student who introduces the discussion. It is continued by two peers

who start their texts with a comment to the previously written one, developing and co-constructing ideas of what culture is.

Excerpt 5

The initiator "Per" has created the discussion thread 'What is culture today?'

Also other definitions of the word exists. As the "culture"-section in todays newspaper, where you can find book-reviews n' stuff. What do you guys think about THAT?

 Posted Apr 18, 2007 2:52 pm

indj re: What is culture today?

This is an interesting subject you pick up Per.

When I hear the word culture I immediately think of theaters, books and similar, just like you write at the end of your post. Because of the new technology new types of culture has emerged. Today you can not only read about book reviews in the culture-section of a newspaper but also reviews of computer games. The culture of today is different from a few decades ago in other ways as well. Today people have a much bigger supply of culture, it is easy to find culture from all over the world via the World Wide Web. The Internet has also made it possible for not so famous artists to present their work for the public.

This new culture might seem better then the "old" one because it is so available. But there are some major drawbacks. Because the culture is so accessible certain people has become addicted to it. There are people quitting their jobs solely to play computer games and that I think is terrible.

 Posted Apr 18, 2007 3:28 pm

matormand re: What is culture today?

In a way I agree with both of you, since the two things I think about when I think culture is precisely those two things, groups of people and different types of popular culture.

Of course these two often merge as many of the subcultures have a clearly defined type of music,

The excerpt is an example of collaborative work where three students share a theme in joint exposition of ideas. The theme involves aspects of culture as an international concept and it is brought to the wiki for exchange of personal views and for co-construction of how 'culture' is understood and defined by the group members. The excerpt illustrates a dialogic discussion. The students adopt an informal style with frequent personal pronouns to position themselves as contributors in relation to what has been posted, e.g. "In a way I agree with both of you" proceeded by text. In this type of activity content rather than linguistic form is generally a concern.

One of the characteristic features with the activity of arguing and discussing is that there is sometimes meta-information found in the form of comments together with new text, which is displayed in excerpt 6. Here, “Hugo” requests one of his group members to continue, which is written in square brackets “någon kan fortsätta här/hugo” i.e. “could someone continue here/hugo”.

Excerpt 6

So culture is everything around us, how we live, what we do, what we enjoy, how we express our feelings into material objects. So when we talk about culture we usually specify a special kind of culture. This can be historical culture, culture differences, a special culture category (music or art for example) etc.

[någon kan fortsätta här /hugo]

To sum up the findings of the two wiki modes, the three activities demonstrate ways of communicating on a wiki. So, to the third research question, about the implication of the interaction to language learning, the outcomes are guided by what modes of the wiki was utilized as a mediational means. The web pages are used for text editing; discarding old textual versions and updating new, revised versions together with some meta-commenting. The discussion forums also host text production but frequently together with peer response and argumentation. Groups tend to apply one of the modes and then stay with it. This is the case within two of the most active groups, the former primarily using their discussion forum and the latter only using their web page.

Discussion

Swedish students in higher education, who have studied English in school for at least eight years, have a good notion of what it means to study English. For them, being engaged in further language learning, implies augmenting and refining existing competences with the aim of targeting professional requirements. With these students, when implementing a wiki as an interactive tool for language learning, there was a variation in what modes were used. More than half of the observed groups chose to share ideas and text under the discussion link of their web page, even though the initial instructions given were to interact directly on their group web pages. In fact, the discussion forum was not mentioned in the introduction of the course, but was adopted by the students themselves. A discussion forum makes versions of text more accessible for peers, displaying previous posts under threaded entries. In addition, only half of the groups used the wiki as a collaborative tool, finding other means of collaborating, such as personal meetings and chat more

suitable. Out of the groups which discarded the wiki after trying it once, some posted a whole piece of text, displaying little interaction on the wiki. Such a full piece of writing posted by one author but unrevised by any other student on the wiki, does not display any writing process.

About the nature of the content on the wiki, when the students provided comments to each other, some feedback was more form oriented whereas other was more focused on content. A few students applied a combination of both approaches when being responsive to fellow students. This indicates that students pay attention to the fact that both formalist and functionalist competences deserve their attention in language learning (Linell, 2001). A wiki offers possibility to develop both these competences.

When analyzing the interaction on the wiki, three prominent activities were distinguished. In the first distinguished activity, *contributing and writing together*, alterations on the web pages were made directly in the text being posted. Any negotiations or argumentations accompanying these revisions or text additions are not possible to verify. This activity constitutes one of the key elements in the wiki technology.

From the investigation of the second activity of *evaluating and peer-reviewing*, for groups who preferred using the discussion forum mode, this activity implied a more dialogic interaction. However, this activity can also be found on the web pages when alterations were made straight in the text without any meta-instruction. There were examples of this activity including both a focus on content as well as form issues to improve the text. This is also raised by Kramsch (2006); that communication cannot be framed as one single skill. Quite contrary, communication in today's complex environments demand a view on linguistic skills as inseparable, where form and content deserve equal focus, as well as cultures-of-use (Thorne, 2003) that are context-dependent, which is also the case in the wiki.

The third activity, *arguing and discussing* had a more distinct dialogic character. Students took turns presenting their views, expressing counterarguments, and making their points clear in order to support their argumentation. This activity involved turn-taking and can be claimed to resemble a face-to-face conversation and was primarily found in the discussion mode.

The increasing number of emerging online multimodal technologies introduces alternative ways of collaboration (Godwin-Jones, 2003), causing a shift in what written language activities look like. Consequently, the concept of digital literacies has implied that what once used to be only reading and writing now embraces a multitude of aspects related to language production emanating from technology

(Barton, 2007; Lankshear & Knobel, 2008). Investigating the activities in the wiki, it is possible to see a parallel between Mercer's (2000) division of classroom talk seen in the activities. Even though this division is designed primarily for talk, the language in emerging technologies, such as a wiki, can be considered on the border between spoken and written forms, in spite of the fact that a wiki is an asynchronous medium. Mercer proposes a division into "cumulative, disputational and exploratory talk" (Mercer, 2000, p.102). The type of communication in "cumulative talk" implies relatively uncritical acceptance of what others say in co-constructing ideas whereas the other two types of talk mean being engaged critically and constructively with each other's ideas. Solving tasks by writing together illustrates how collaboration changes the text character by assuming that there is an added value in diverse perspectives of contributors. Mercer's division of collaborative endeavor when meanings are negotiated can therefore be adopted as a way of seeing the interaction on a wiki.

Conclusion

The results showed that three activities were distinguished when students of higher education used a wiki as a learning environment within the frames of their language course. Depending on what mode the students used, web pages or discussion forum, certain activities were enhanced more than others. From a language learning perspective, peer work on the web pages essentially have a form based focus, pointing more towards collaborative work targeting specific grammar issues and vocabulary. The web pages visualised how new and improved text versions were updated. The type of text found in the discussion mode, on the other hand, was more explanatory and reasoning. It was adopted for both linguistic and for more content related activities where students took turns presenting text. Activities in the discussion forum, embedded linguistic comments in more argumentative texts, e.g. with a focus on rhetoric, giving explicit peer feedback on content as to how successful arguments were expressed and communicated.

In some of the student interaction, the temporal unit seems to have an influence on how the activity resembles a synchronous dialogue with its characteristics in increased turn taking. Also, apart from collaborating on the wiki students used other meeting spaces, both online and physical meetings. The various student activities as represented in the wiki indicate the significance for further development of course and task design in relation to collaborative learning, and to address both linguistic and communicative competence.

Finally, this study illustrates the types of activity that the students are engaged in when using a wiki within the frames of a language course. The fact that the activities were student driven leads to questions of how the collaboration is enacted and what peer work and student feedback means for language learning. Since, in an environment based primarily on peer scaffolding, the teachers' role becomes less prominent than in a traditional classroom.

There are an increasing number of online writing environments where patterns of writing are worth investigating, since this will "allow for greater awareness of the ways writing skill develops and how it can be taught in different contexts" (Jones, 2008, p. 285). Thus, it is advised to perform more focused studies of how conditions can be changed through the pedagogical framing around web based tools and what this offers for language learning.

References

- Arnold, N., Docate, L., & Kost, C. (2009). Collaborative writing in wikis, In Lomicka, L. & Lord, G. (Eds.), *The next generation: Social networking and online collaboration in foreign language learning*, CALICO Monograph Series, 8, 115-144.
- Augar, N., Raitman, R., & Zhou, W. (2004). Teaching and learning online with wikis. *ASCILITE 2004*, <http://www.ascilite.org.au/conferences/perth04/procs/augar.html>.
- Bakhtin, M.M. (1986). *Speech genres and other late essays*. Austin: University of Texas Press.
- Barton, D. (2007). *Literacy - an introduction to the ecology of written language*. Blackwell Publishing, Oxford, UK.
- Forte, A., & Bruckman, A. (2006). From Wikipedia to the classroom: exploring online publication and learning. *Paper presented at the International Conference of the Learning Sciences*, Bloomington, IN.
- Garza, S. L., & Hern, T. (2006). *Wiki as a collaborative writing tool*, Retrieved February 20, 2010, from <http://critical.tamucc.edu/wiki/WikiArticle/WikiAsACollaborativeWritingTool>.
- Godwin-Jones, R. (2003). Emerging technologies: Blogs and wikis: Environments online collaboration. *Language Learning and Technology*, 7(2), 12-16.
- Grant, L. (2006). *Using wikis in schools: a case study*. Retrieved February 20, 2010, from <http://www.futurelab.org.uk/research/discuss/05discuss01.htm>
- Gutiérrez, G.A. (2007). Sociocultural theory and its application to CALL: A study of the computer and its relevance as a mediational tool in the process of collaborative activity. *ReCALL*, 18(2), 230-251.
- Hyland, F., & Hyland, K. (2006). State of the art article: Feedback on second language students' writing. *Language Teaching*, 39, 83-101.
- Jones, J. (2008). Patterns of revision in online writing: A study of Wikipedia's featured articles. *Written Communication*, 25(2), 262-289.

- Kern, R. (2006). Perspectives on technology in learning and teaching languages, *TESOL Quarterly*, 40(1), 183-210.
- Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, 13(1), 79-95.
- Kramsch, C. (2006). From communicative competence to symbolic competence. *The Modern Language Journal*, 90(2), 249-252.
- Lankshear, C., & Knobel, M. (2003). *New literacies. Changing knowledge and classroom learning*. Open University Press.
- Lantolf, J., & Johnson, K. (2007). Extending Firth and Wagner's (1997) ontological perspective to L2 classroom praxis and teacher education. *The Modern Language Journal*, 91(5), 877-892.
- Leuf, B., & Cunningham, W. (2001). *The wiki way: Quick collaboration on the web*. Boston, MA: Addison-Wesley Longman Publishing Co.
- Leung, C. (2005). Convivial communication: recontextualizing communicative competence. *International Journal of Applied Linguistics*, 15(2), 119-144.
- Linell, P. (1998). *Approaching Dialogue. Talk, interaction and contexts in dialogical perspectives*. Amsterdam: John Benjamins Publishing Company.
- Lund, A., & Smørdal, O. (2006). Is there space for the teacher in a wiki?. *Paper presented at the WikiSym'06*, August 21-23, 2006, Odense, Denmark.
- Lund, A. (2008). Wikis: a collective approach to language production. *ReCALL*, 20(1), 35-54.
- Mak, B., & Coniam, D. (2008). Using wikis to enhance and develop writing skills among secondary school students in Hong Kong, www.sciencedirect.com, *System*, 36, 437-455.
- Mercer, N. (2000). *Words and minds: How we use language to think together and get things done*.
- Miyazoe, T., & Anderson, T. (2010). Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting. *System*, 38, 185-199.
- Murray, L., & Hourigan, T. (2008). Blogs for specific purposes: Expressivist of socio-cognitivist approach? *ReCALL*, 20(1), 82-97.
- Thorne, S. L. (2003). Artifacts and cultures-of-use in intercultural communication. *Language Learning and Technology*, 7(2), 38-67.
- Vygotsky, L. (1997). *The instrumental method in psychology*, Retrieved February 20, 2010, from <http://www.marxists.org/archive/vygotsky/works/1930/instrumental.htm>.
- Wang, H.-C., Lu, C.-H., Yang, J.-Y., Hu, H.-W., Chiou, G.-F., & Chiang, Y.-T. (2005). An Empirical exploration of using wiki in an english as a second language course. *Paper presented at the 5th IEEE International Conference on Advanced Learning Technologies (ICALT)*, Kaohsiung, Taiwan.
- Warschauer, M., & Grimes, D. (2007). Audience, authorship, and artefact: The emergent semiotics of Web 2.0. *Annual Review of Applied Linguistics*, 27, 1-23.
- Warschauer, M. (2005). Socio-cultural perspectives on CALL. In J. Egbert & G.M. Petrie (Eds.), *CALL Research Perspectives* (pp. 41-51). Mahwah, NJ: Lawrence Erlbaum.