Sylvana Sofkova Hashemi

*Ph.D., Senior Lecturer, Department of Social and Behavioral Studies,
Division for Educational Sciences and Languages, University West*

Wiki-mediated Writing: design, media, writing strategies and feedback in online text production

Abstract

Bringing social media arenas, such as wikis, into the classroom invites teaching approaches that engage students in authentic, participatory and creative writing processes. This case study examines the online text production of primary school students in a wiki environment and how the key functionalities for commentary, discussion, logging skills of text and multimodal expression are utilized in practice to develop writing. Exploring the design of assignments and analysing the nature of final texts, writing strategies and feedback reveals an iterative process of writing dominated by strategies of expanding texts with new information and occasional surface editing. The students composed individual narratives on selected themes augmented by drawings, images, speaking avatars and video clips. Feedback was mainly provided by the teachers in the form of encouraging comments and corrective revisions directly in the students' texts. Peer response was rare, in one project taking the form of discussion posts. Revising indicating increased language awareness was observed among second language learners. Overall, the study demonstrates a tension between instructional design, the affordances of the writing arena and the space for creativity when engaging students in advanced, participatory and reflective composing and revising of texts.

Introduction

Social media provide opportunities for the production of content online and literacy practices that involve communication, publication and active participation in multimodal environments. Children and young people are frequent writers in online digital environments in their leisure time. They develop experiences in digital communication and sharing of information, and they are creative in their use of language (e.g. Hård af Segerstad & Sofkova Hashemi, 2006; Crystal, 2009). Besides private communication in text messaging (SMS, chat) and status updates on web communities such as Facebook, the public writing that takes place in blogs and wikis provides for an authentic form of text production where other forms of expression, such as

images, sound and video, usually appear and which others can read and comment on. Exploring these new ways of writing and communicating broadens and challenges the educational practices and views of teaching reading and writing by shifting the focus to literacy as a social practice (Barton, 1994; Merchant, 2008). With new technologies, new ways of meaning making emerge generating new textual forms, also shifting attention to the affordances of different media, multimodality and new communicative practices (Kress, 2003). Bringing social media arenas into the classroom, writing in school becomes increasingly visible, “real”, interactive and multimodal, and more of a dynamic process as opposed to print-based practice with the text as a static and linear artefact (Kress, 2003; Warschauer, 2008). In a wiki students can collaborate on texts, add images, video clips, sound effects or links to other websites to enhance and clarify the message. With the functionalities for commentary and discussion, students can be activated in reflective practices and reason about their own and peer’s text. The continuous logging and visualization of changes in a wiki supports the review process, directing attention to the composing of a text and not only the final product.

In order to explore how the conditions and dimensions of online text production are utilized to develop writing in young learners, four class projects at the primary school level making use of wikis as a writing environment were studied. The objective was to examine the design of writing assignments and how the key affordances of wikis for commentary, discussion, logging of text and multimodal expression are applied in the process of text production. Analyses are directed to the nature of final texts, the form and occurrences of teacher and peer feedback, and writing strategies during text production.

Research overview

Wikis are by design participatory, collaborative and engaging. Creating a wiki means producing a website that is shared by several users and pages can be edited by the members themselves through a web interface (Richardson, 2009). The functionalities of wikis support both individual writing on a page, as well as a shared, collaborative construction of text. Changes of any kind are stored in a history log on the site.

Research on wikis in education is based on an educational context deriving mostly from work with students in higher education and at the secondary school level (Grant, 2009; Woo, Chu, Ho & Li, 2011). In this context, a wiki is considered as a teaching tool that is in particular connected to collaboration and active student engagement, and as facilitating socio-constructivist learning (Désilets & Paquet, 2005; Parker & Chao, 2007; Karasavvidis, 2010). In addition to discussions regarding the suitability of Wikipedia as a source for student research, *collaborative writing* and *collective learning* activities form the

educational areas mostly connected to the use of wikis in education. Other educational activities involving wikis include student interaction, peer assessment, reflection and the generation of teaching materials (Karasavvidis, 2010; Ferris & Wilder, 2006; Lundin, 2008; Phillipson, 2008; Tonkin, 2005). In the implementation of wikis in education, instructional design and practice are considered crucial to successful learning outcomes (Warschauer, 2010). A general assumption is that wiki activities must be encouraged or driven by an instructor, and also leave room for autonomy, encouraging students into participatory and creative processes of learning (Lamb, 2004; Gilbert, Chen & Sabol, 2008).

Previous studies on wikis in writing instruction report on enhanced motivation in students and the production of longer and more qualitative texts. This has been attributed to the simplicity of the technology to publish and reorganize content, as well as the opportunity to visualize and observe the process behind the text and not only address the final product (Mak & Coniam, 2008; Phillipson, 2008; Karasavvidis, 2010; Barton & Heiman, 2012). Wikis are in this sense considered to support writing development both at the cognitive levels of planning, transforming and reviewing of text (Flower & Hayes, 1981), as well as the socio-cultural aspects of writing. In a wiki, text production is perceived as more for “*real*”, *visible*, *collaborative* and *iterative*, meaning that students are writing in authentic settings and to an immediate audience. They can easily and continuously view their progress in writing by looking at earlier versions of a page, go back and edit, or restore previous content (Ferris & Wilder, 2006; Kovacic, Bubas & Zlatovic, 2007; Mak & Coniam, 2008; Warschauer, 2008). The easy way to add, reorganize and review content in a wiki has been shown to facilitate more advanced expansions and reorganizations of texts, resulting in texts of greater complexity (e.g. Mak & Coniam, 2008). Such activities of transforming knowledge in the writing process are rare among novice writers, who tend to apply a more direct approach of “simply telling” (Scardamalia & Bereiter, 1986; Dix, 2006).

As regards revision, several studies indicate that large amounts of revisions take place when writing in a wiki and that focus is directed more to the content and meaning-developing changes (e.g. Mak & Coniam, 2008; Arnold, Ducate & Kost, 2009; Woo et al., 2011). Prior research on feedback and revision processes in writing has, on the other hand, shown not only that inexperienced writers tend to revise their text infrequently and superficially, but also that they do very little editing without peer or teacher support. Surface revisions, such as punctuation and orthography, predominate regardless of the competence of the writer (Sommers, 1980; Scardamalia & Bereiter, 1986; Fitzgerald, 1987). Research on the effects of feedback in writing is dominated by studies on second language writers and corrective feedback (McGrath, Taylor & Pychyl, 2011; Ferris, 2012). Some scholars argue corrective feedback in writing generally helps students to revise their work, regardless of the degree of explicitness in feedback

(Ferris & Roberts, 2001). However, there are disagreements not just about whether to correct, but also what errors to correct, how and when (e.g. Krashen, 1982; Hyland & Hyland, 2006). In pedagogical theory positive feedback is viewed as important in providing “affective support to the learner and fosters motivation to continue learning” (Ellis, 2009a:3).

The study and methods

Purpose and research questions

Based on the results from previous studies on writing in wikis and a socio-cultural assumption about learning as a situated meaning-making activity, developed through social interaction mediated by cultural artefacts (Vygotsky, 1978), the study explores the use of wikis among young learners as new and promising tools that encourage student participation, visualization of the writing process and the development of more advanced, creative and reflective writing strategies.

The aim was to investigate the online text production in wikis and examine the design of the writing assignments, the nature of the finished texts, the teacher and peer feedback, and the writing activities during text production in relation to the functionalities offered in wikis for commentary, discussion, logging of text and multimodal expression. In particular the study explores:

1. How the writing assignments are designed in a wiki.
2. How immediate opportunities for commentary, discussion, logging of text and multimodal expression are utilized to develop writing skills.

Selection of data and methods

The study was conducted as a case study of class projects where wikis were used as a writing environment (Thomas, 2011). Four writing projects were randomly selected among Swedish primary school wiki projects accessible on the Internet. The projects were carried out by two 4th grade classes and two 6th grade classes, who composed narrative stories on selected themes in the *Wikispaces* environment, a free and well-known wiki host, specifically designed for use in school settings (www.wikispaces.com).

A descriptive content analysis was carried out with a focus on the design of the writing assignments, supplemented by quantitative data on the duration of the projects, the number of students involved, and the distribution of gender, all based on the information logged in the wiki's version control. The analysis of the final versions of the produced texts focused on the length of the texts and types of (hyper)media (image, video, sound effects, links) occurring in the texts in comparison between the projects, ages and gender.

Writing activities involved in the composition and editing of the texts were analysed using the history logs of the individual student pages. Here the nature and frequency of teacher and peer feedback was mapped, thus revealing the occurrence of responses as entries in texts or as discussion posts. Furthermore, revision patterns of a sample of six randomly chosen students were categorised based on the taxonomy of revisions developed by Faigley and Witte (1981). Attention was made to the types of revisions (surface or text-based) and the relation of revision patterns to the feedback of teacher. Overall, the study reports on:

1. The design of the writing assignments
2. The nature of the final texts as concerns text length and types of media inserted
3. The occurrence, nature and frequency of teacher and peer feedback
4. The overall characteristics of writing activities
5. The revision patterns of a selected sample of texts in relation to teacher feedback

Having access to the class wikis only, the analyses are concerned purely with the texts and activities conducted in the wikis. Thus the study examines neither the writing instruction, nor practices in the classroom context. Nor does it provide other information on the subjects in relation to their social background, or any other demographic variables. Nevertheless the study yields reliable results based on analyses of the same text types, environment and population, that is to say individual narrative stories of primary students conducted in the environment of a wiki.

The writing projects

The four selected writing projects all made use of the environment of *Wikispaces* with the writing assignment introduced by the teacher at the main-page and with separate wiki-pages for every student in the class, where they composed their individual stories. This section gives an overview of the four projects and how the wiki-projects and the writing assignments were introduced.

Overview of the projects

In all four projects the students wrote individual narrative stories on given themes: ghost stories (*Ghost Stories*), stories about a house and people who live there (*The House*), detective stories (*Detective Stories*) and stories about the residents of a building (*Villa Mimmi*), see Table 1.

Classes of 22 to 26 students participated in the projects. In the case of *The House*, the majority of students had Swedish as a second language. The distribution of gender among students is fairly even in *The House* and *Villa Mimmi*. In *Ghost Stories* girls are in the majority, the reverse being the case for the *Detective Stories*, where boys are overrepresented.

As concerns the period of time dedicated to the writing projects, in three of the projects the stories were produced during a three-month period. In the case of *Ghost Stories* in grade 4 the texts were produced over a slightly shorter period of time, roughly one and a half months.

Table 1. Overview of the wiki projects

Project	Grade	Duration	Number of girls	Number of boys	Total
Ghost Stories	4	1.5 months	19	7	26
The House	4	3 months	12	10	22
Detective Stories	6	3 months	7	17	24
Villa Mimmi	6	3 months	12	11	23

Introduction and instructions for the writing assignments

The projects were introduced in two different formats at the main pages of the wikis, either having the student and the writing assignment in focus, or addressing the visitors of the wiki. In two of the projects addressing the students (*Ghost Stories* and *Villa Mimmi*), the writing assignment is introduced by a description of the goal followed by a list of tasks to be carried out. For *Ghost Stories* the goal is: “*We must practice writing stories with a ‘common thread’, with an intriguing beginning, a lively story, and a thrilling end!*” and the writing tasks relate to the text’s storyline, linguistic considerations, such as the use of capitals and punctuation, reading of the composed text and giving positive feedback to peers. In *Villa Mimmi* the goal is: “*In this wiki we will together create the apartment block Villa Mimmi! Villa Mimmi has 24 residents. Your task will be to write about a person who lives behind one of the windows you can see from the street.*” and the tasks concern the character and storyline.

Figure 1.
Speaking character

The other two projects address the visitors of the wiki. In *The House* project an animated figure, a voki (www.voki.com) as in figure 1, presents the topic with the words: “*Hello and welcome to our wiki! Our wiki is called The House and here we all in grade four have written a story about a house and the people who live in the house.*” For the *Detective Stories* the teacher describes the

background to the project and the goal as “to get the students more interested in writing by jointly creating a wiki.” then listing the learning goals to strive for.

Nature of the final texts

Before studying the actual text production and the text activities that occurred when producing the wiki texts, let us take a look at the final versions of the students’ texts. The objective was to examine the length of the final texts and occurrences of images and other modes of expression.

Length of the final texts

The aim of the analysis of the length of the final texts is to reveal the average length of texts and the distribution among the separate projects, ages and gender. Figure 2 illustrates the average number of words in the final texts indicating differences in age and gender, rather than between the individual projects. The younger students in grade 4 generally wrote shorter texts. Their ghost stories and stories about people living in *The House* are between 700 and 1,000 words in length. There are texts in the material that are about 100 words long and also one that is 6,345 words in length in grade 4, although this is somewhat of an exception. The older students’ texts in grade 6 on detective stories and the residents living in *Villa Mimmi* are, on average, between 1,400 and 1,700 words long. The shortest text is 232 words long and the longest 4,572 words.

As regards gender, the girls’ final texts are, in three of the four projects, on average longer in terms of the number of words, and in *Ghost Stories* and *Detective stories* double the length of the boys’ texts. The opposite is true for the final texts of *The House*, where the boys’ texts are longer. Here two texts written by boys are over 2,500 words long, deviating substantially from the average of 500 words.

Figure 2. Average number of words per text: girls vs. boys

Images and other modes of expression

Wikis, similarly to other types of webpages, offer an easy way to integrate digital images, videos, links and other media that can be obtained from other sites on the Internet. Also the final texts in these four wiki-projects were accompanied by different media elements, such as self-produced drawings, digital images and animations, speaking characters, video clips and links. The distribution of the types of media embedded in the final texts is presented in figure 3.

Figure 3. Average number of images and other media per text

The *Ghost Stories* were rich in images of ghosts, scary pictures and other types of enhancement for the frightening parts, such as using capital letters in red colour when writing about blood, as illustrated in figure 4. On average one such image was embedded per text, as shown in the diagram in figure 3. A few students also inserted animated images in their texts and a girl embedded six links to other websites.

Figure 4. Image and title in final text ("Blood on the carpet!")

In *The House* project, all the stories contained a drawing of the house the stories were about. Drawings of the residents living in the apartments were also embedded in many texts, with an average of 2.2 self-produced drawings per text.

Almost all of the *Detective Stories* in grade 6 contained at least one drawing of the city plan or other places in the city where the story took place. Most of the students also embedded a speaking character at the top of their page representing them as the author and introducing the story. A boy inserted a picture of a dog on his page.

The final texts of *Villa Mimmi* in grade 6 contained a variety of media as shown in figure 3 above. On every page a drawing of the resident was displayed and one or more video clips from YouTube of the artist the character of the story had as a favourite. Most of the stories were introduced by a speaking character as shown in figure 5, with the student's introduction to the story quoted in the speech balloon. Further digital images were embedded in the texts, for instance of the pet animal of the resident, or in the form of a digital business card. Only two links to other websites occurred in the entire material.

Suss.

Det här är Suss. Det är en tjej på 16 vrar som desperat flytt hemifrn efter att ha hamnat i brk med sina frldrar. Hon har kpt en lgenhet som ligger ganska centralt, men hon r verkligen lspank. Suss tycker om att festa. Att vara p gymmet r ingenting hon uppskattar, i och med att hennes mage inte lngre r s vltrnad som frr. Efter att hon flyttat har hon inte lngre rd med gymkort, vilket gr att det aldrig blir av att hon trnar. Suss gr i frsta ring och pluggar hrt fr att f ett bra jobb. Just nu ser det inte s lst ut, eftersom att hon koncentrerar sig p att kpa saker till sin lgenhet. och drfr glmmer hon ofta bort lxorna och fr snkt betyg. Suss r sdr snygg. Brunt, lngt, lockigt hr, som slutar strax ovanfr naveln. Suss har ingen pojkvn, men enligt rykten r hon kr i brevbraren..

Suss.

This is Suss. She is a girl of 16 years who desperately fled from home after having been in fight with her parents. She bought an apartment which is located fairly centrally, but she is completely broke. Suss likes to party. Being in the gym is nothing she enjoys, in that her stomach is no longer as muscular as before. After she moved, she can no longer afford a gym card, which means that she never gets to work out. Suss is in the first year and is studying hard to get a good job. Right now things don't look so rosy, as she concentrates on buying things for her apartment. and therefore she often forgets homework and gets lower grades. Suss is so-so pretty. Brown, long, curly hair, ending just above her navel. Suss has no boyfriend, but according to rumours, she is in love with the postman ..

Figure 5. Text excerpt with a drawing and a speaking character

To summarize, drawings and digital still images dominated as media in the texts of the younger students. The texts in grade 6 contained besides drawings and images also speaking characters. In *Villa Mimmi* video clips were embedded in

the texts. Animated pictures and links appeared a few times and on the initiative of the students, i.e. not part of the writing instructions.

Occurrence and frequency of response

Examining the history logs of the produced texts and discussion posts connected to them reveals the occasions and frequency of comments from the teacher and peers to the author of the text. In Table 2 the average number of entries and discussion posts in a wiki page are presented. The calculations are based on the number of entries from users other than the author of a wiki page as stored in the version control log and thus do not estimate the number of individual comments or editing on the page. As revealed by the data in Table 2, most posts are made directly in the students' texts and by the teachers. Only in the *Ghost Stories* was discussion used to provide responses.

Table 2. Average number of entries and discussion posts per page

Project	Grade	Average number of entries in text		Average number of discussion posts		
		teacher	other student	other student	the student	teacher
Ghost Stories	4	0.5	0.1	2.4	0.7	0.3
The House	4	2.4				
Detective Stories	6	0.7	0.1			
Villa Mimmi	6	5.7	1.0			

In figure 6 further illustration of the degree of occasions when the teacher or another student enters a student's text is shown. The average number of entries per page varies substantially between the projects. The largest range of entries is by the teacher in *Villa Mimmi*. Here the teacher comments frequently and regularly. On average the teacher made 5.7 entries per page, which means a response frequency of five or six times during text production. Responses from the teachers in the other three projects are less frequent. In *The House* project, the teacher feedback varies from one to five times, i.e. an average of 2.4 entries per page. In *Detective Stories* less than half of the students received an encouraging comment from the teacher at the beginning of their writing, ending with an average number of 0.7 entries per page. Also in the *Ghost Stories* project the frequency is low, both as comments in the student's text (0.5) or as discussion post (0.3).

Peer response was an explicit task only in the *Ghost Stories*, where the students had to write at least two posts commenting on each other's stories. In *The House* project no entries by other students were found, and in the other two projects only a few written comments in peers' texts occur.

In summary, response in the four writing projects was mainly carried out by the teachers and directly in the students' texts. During the text production the frequency varied between five and no responses at all. Students commented sporadically on peers' texts. In one project the discussion forum was used in the response work.

Figure 6. Average number of entries per page

The nature of teacher and peer feedback

The forms of response found in comments from teachers and peers in the texts and as discussion posts were analysed in terms of positive and corrective feedback, as well as for strategies for providing feedback (direct or indirect) (see Ellis, 2009a-b; Ferris & Roberts, 2001).

In the *Villa Mimmi* project the teacher feedback is well organized. The students get responses on their texts on at least two separate occasions, once at the beginning and once at the end of their writing. In the first response, the teacher mostly gives explicit corrective feedback by editing in the student's text and correcting spelling, punctuation and the use of capital letters. Occasionally the teacher writes comments concerning the content of the text as in: "*A description of a person should not be about individual events. Try to describe how he is, not what he has done.*" In the final response, the teacher gives a summative positive feedback in the form of encouraging comments and comments on the language use and difficulties the student may have, as in: "*You have worked very well with your text. Given that you don't always find it easy to get started, this work has shown a different side of you.*" or: "*Sometimes very colloquial or chat language, but overall good. You make often errors in compounds...*" Also further direct corrections in the text occurred. Peer response is not explicitly part of the writing assignment in this project, however, a few students made positive encouraging comments to peers such as: "*What a great story or whatever it is called you have begun with!*"

In the *Detective Stories* project less than half the students received an encouraging comment from the teacher at the beginning of the narrative, often

also involving indirect corrective feedback relating to the formatting of the text or grammar, reminders about the focus of the assignment, questions about the content, and ideas about how to further develop the story, such as: *“Good story. Try to get some order into the spacing and font size. Preferably add an image. How will you continue, have you figured out how to finish?”* Peer comments are few and like: *“Hiiii! I'm just testing.”*

In *The House* project the teacher only gives feedback ranging from once to five times. Responses are in general in the form of positive comments and indirect corrective feedback to the choice of words and structure of sentences and invitations to develop further the story, as well as explicit corrections: *“You spell and write very well!”* or *“Write and tell a little more about how it is like in front of and behind the house.”* Corrective feedback focused mostly on punctuation and the use of capital letters: *“Read the text again, put out full stops and capitals at the beginning of all sentences and all names! I think you write really well.”*

In *Ghost Stories* the teacher's feedback is indirect and corrective in the form of comments to the formatting of and further development of text, as well as to linguistic aspects: *“Read through your text, try to find places where you can divide the text into paragraphs so that it becomes a little more broken up and more legible. Think about how you present the people in the text, can you describe them more clearly in your story?”* The teacher also gives feedback in the discussion a few times and encourages students to continue writing their story: *“You write in a way that gives me nightmares!”*, *“Good work!”* or *“Now is the time to get started and get on with the ghost story!”* Response to peers is part of the writing task and the teacher specifically instructs the students to comment on other classmates' texts: *“What four classmates are listed after your name? (i.e. in the wiki) Read these four friends' texts and then provide positive feedback on them. You write to your friend by clicking the 'discussion' above the text box.”* Figure 7 shows an example of a discussion post from a peer:

Good spookis XD!!

Singoalla Feb 10, 2009 4:17 am

Hehe den e grym!!!! Asså du har typ fått med allt:

Miljöbeskrivningar

Känslor

En bra handling(och i det här fallet läskig.....)

Den e verkligen GRYM!!! Fortsätt så!

Good Ghostis XD!!

Haha it is cool!!!!!! You've kind of got it all:

Descriptions of the setting

Emotions

A good storyline (and in this case scary)

It is really COOL!!! Keep it up!

Figure 7. A student's response in the discussion in wiki

The student starts and ends with a positive response and incorporates comments connected to the narrative structure of the text genre. She also applies communicative strategies usually found in computer-mediated communication, such as smileys, expressions for laughter and speech-like spelling. Although most of the discussion posts from peers were encouraging, there were also less positive comments, such as: “*You have written a lot??? Nooooooot!!!!!!*” A number of students made comments also in the texts outside the context of revising, like: “*Hi if you think I’m cute, say it to me.*”

In summary, response from teachers in all the projects included both positive and corrective feedback. Positive feedback occurred in the form of an encouraging comment at the beginning or end of the student’s writing. Corrective feedback occurred both in the form of direct and indirect correction on surface and text levels, with focus on punctuation and capitalization in grade 4. In the sixth grade the demand was on awareness of language style (varied language and colloquial), headings, punctuation and capitals, as well as spelling. Feedback by peers was part of the writing assignment in *Ghost Stories* only. Here the students gave in general rather simplistic positive feedback about how good a story was. Otherwise feedback from students was fairly parsimonious and in the form of a short positive comment or just a simple phrase expressing their presence.

Writing activities and revision patterns

Version control in a wiki saves the website on every occasion a page is entered by a user, thus providing a valuable source of information for examining and visualizing the process of text production. Students can easily enter their “writing history”, go back in time and view the revisions they had made reflecting upon the development in their text. Further, the teacher, in this history of revisions, has a useful tool for observing students’ development. In this section analyses of text activities from the beginning of the composition to the final texts are presented. Focus is in particular directed to revision strategies and implications for learning opportunities.

Writing activities and revising

The analysis of the history logs of the individual stories provides insights into the text activities from the beginning of the text production to the final occasion a page is entered. To simplify and to avoid mixing activities connected to the composition of a text with revisions, text that was added towards the end of a writing event is categorized as ‘new’. All other changes to the text are categorized according to the taxonomy of revisions by Faigley and Witte (1981). A division is made between *surface changes* that do not alter meaning in a text

and *text-based changes* that do alter meaning. The latter are more complex and considered as more cognitively challenging for novice writers (Flower & Hayes, 1981). Surface changes concern *formal revisions* (e.g. spelling, punctuation) and *meaning-preserving* additions, deletions, substitutions or reordering in words, phrases or sentences where the intention is to improve accuracy. Text-based changes are divided into *micro* and *macrostructure* changes affecting the meaning of a concept or a whole text (Dix, 2006).

In sum, the analysis indicates above all processing of text as a strategy of adding new information at the end and some surface and local text-based revising. To demonstrate, below is an example of the beginning of one of the ghost stories. Highlighting the changes made in the text between two subsequent occasions, the red colour (the strikethrough text in the translation), illustrates the text that has been deleted and replaced, and the text in green (bold face in the translation) indicates the new text. The student revises two words in her text and replaces *girl* with *lady* and then continues to write:

En gång för länge sedan var det en ~~flika~~ **dam** som var på väg hem från sin ~~kompis~~. **Flickan** ~~kompis~~. **Damen** gick över en bro, när hon kommit ~~halva~~ **halvvägs** över bron ~~stanade hon för att titta på vattnet.~~ **hon hengde sig förlångt över kanten, hon ramlade ner i vattnet. Hon kunde inte simma så hon drungnade. sen den dagen sejs det att hon hemsöker bron på natten var femte år. 1000 år senare**

Once long time ago there was a ~~girl~~ **lady** who was walking home from her ~~friend~~. ~~The girl~~ **friend.** **The lady** walked over a bridge, when she had come ~~half~~ **halfway** across the bridge she ~~stopped to look at the water.~~ **she hang ed herself too far over the edge, she fell into the water. She could not swim so she drowned. since that day it is said that she haunts the bridge at night every fifth year. 1000 years later**

Excerpt 1. From history log of Ghost story of Student 1, grade 4

On the fourth occasion the student gets an encouraging comment from her teacher: “*What patience you have. Work on, it works great for you!*” The subsequent task in this assignment is then to: “*Read what you wrote so far: does the reader understand everything? Have you used capitals and punctuation where they are needed? Have you chosen an intriguing title?*” On this occasion the student switches focus and works actively on the formal parts. She corrects lower case letters to capitals, a spelling mistake and adds blank spaces between sentences:

När dom hade gått ett tag behövde ~~jonas~~ Jonas gå på ~~toa.~~Jonas ~~toa.~~ Jonas gick till en ~~buske.~~elinor ~~buske.~~ Elinor väntade på honom ett par meter ~~bort.~~Helt ~~bort.~~ Helt plötsligt hör Elinor ett konstigt ljud.
 -Är det du Jonas?
 Ljudet kom närmare och närmare.Elinor börja skaka.
~~-kom~~ -Kom fram nu Jonas Jonas Jonas!!
~~figuren~~ Figuren kom fram.Elinor fram. Elinor vågade inte titta.Ett titta. Ett genomskeinligt monster kom fram och i det låg Jonas som en ~~sombi~~ zombie och stirrade på Elinor .

When they had gone for a while needed ~~jonas~~ Jonas go to the ~~bathroom.~~Jonas bathroom.
 Jonas went to a ~~bush.~~elinor bush. Elinor was waiting for him a few meters ~~away.~~Quite away.
 Quite suddenly Elinor hears a strange sound.
 -Is that you Jonas?
 The sound came closer and closer.Elinor begins to shake.
~~-come~~ -Come forward now Jonas Jonas Jonas!!
~~the figure~~The figure came forward.Elinor forward. Elinor dared not ~~look.~~A look. A sheer monster came forward and in that lay Jonas as a ~~sombi~~ zombie and stared at Elinor.

Excerpt 2. From history log of Ghost story of Student 1, grade 4

The difference between the revisions made by Student 1 before and after receiving instructions from the teacher is quite substantial. Mapping her surface-based and text-based changes, Student 1 makes meaning-preserving changes (MP) and text-based changes at the micro-level (Mi) before receiving the instruction, mostly by substituting words (see Table 3). After the instruction, the student focuses much more attention on the formal surface level and corrects language. Changes in content include the insertion of new text towards the end (New), a title to the story, and revisions that do not affect meaning (MP), such as:

Det var halloween och Elinor skulle klä ut sig till en häxa. Elinors kompis som hon skulle gå ut och säga bus eller godis med skulle klä ut sig till ett spöke. Han heter Jonas. Jonas brukar alltid skrämmas men idag har han lovat att inte ~~skrämmas.~~ göra det.

It was halloween and Elinor was about to dress up as a witch. Elinor's friend that she would go out and say trick or treat with would dress up as a ghost. His name is Jonas. Jonas always used to scare but today he has promised not to ~~scare.~~ to do it.

Excerpt 3. From history log of Ghost story of Student 1, grade 4

Table 3. New text, surface and text-based revisions before and after teacher's instruction or comment:

Student (S), female (F), male (M)

Occasions of adding new text (New)

Surface Formal Changes: spelling (S), punctuation (P), capitals (C)

Surface Meaning-Preserving Changes (MP)

Text-Based Micro Changes (Mi)

(Text-Based Macro Changes (Ma) – not presented due to zero occurrences)

Project & Student		Formal Revisions			SUM	Addition		Deletion		Substitution		Reordering		SUM
<i>Ghost Stories</i>	New	S	P	C		MP	Mi	MP	Mi	MP	Mi	MP	Mi	MP-Mi
S1 (F) before	5				0			1		2	3			2-4
after	4	5	9	7	21		1	1		1				0-3
S2 (M) before	4	1		2	3	1					1			1-1
after	5	3		1	4		3	1		4		2		6-4
S3 (F) before	7	1	8	2	11		1	1		2	3			2-5
after	1		2	1	3	1					3			1-3
Project & Student		Formal Revisions			SUM	Addition		Deletion		Substitution		Reordering		SUM
<i>Villa Mimmi</i>	New	S	P	C		MP	Mi	MP	Mi	MP	Mi	MP	Mi	MP-Mi
S4 (M) before	12	3	2		5	1				8				9-0
after	9	9	1		10			3		7				10-0
S5 (F) before	4	2		1	3			1						1-0
after	14	5	4	2	11	1	2	3		5	3			9-5
S6 (M) before	2				0									0-0
after	14	4		2	6					3		3		6-0

Analysis of the revision strategies of another two students in the same project reveals similarities in the types of revisions made (see Table 3). Here, however, the effect of teacher's instruction is not that obvious. In fact, the activities of Student 2 and Student 3 are dominated by new text appearing at the end of their writing and revisions at the surface and micro levels. The difference is that the two students revise language and content on a parallel basis right from the beginning of their writing. Revisions after the instruction from the teacher thus do not indicate any significant increase in revising the formal language, as was the case for Student 1. Instead, Student 2 made more additions and substitutions in the content after the instruction and only a few formal revisions. Student 3 worked generally in a similar way, also decreasing her revision activities after the instruction. None of the students made any text-based changes at the macro-level.

In the texts in the *Villa Mimmi* project in grade 6, we find similar indications of expanding text with new information and varied editing strategies. As shown in table 3, Student 4 focuses on the content before the feedback from the teacher, mostly replacing words. Then he corrects as many as nine spelling errors after the feedback and again substitutes and deletes some of the content. Student 5

makes only few formal changes and one surface deletion before the feedback and she increases her revisions after the feedback, both on the surface and text-based levels. Student 6 starts to revise his text first after the feedback and makes a few formal changes in spelling and capitals and he substitutes and reorders words.

Results from the analysis indicate a dominance of the strategy for expanding the text with new information and a varied degree of revision of language correctness and content that either does not affect meaning at all, or does so only locally. These strategies are typical for novice writers, who basically just change the surface-level features in text and pay less attention to revision of content (Krashen, 1982; Faigley & Witte, 1981). The influence of teacher's feedback on the revision strategies of the students is also very individual.

Indications of development in language awareness in L2 students

Studying the history logs in *The House* project, where the majority of students had Swedish as a second language, the analysis reveals similar writing strategies, with students writing on and expanding their texts more than editing the content. However, there are examples of revisions that indicate enhanced language awareness rather than only simple paraphrasing. As illustrated below, a student replaces the word *apartment* with *floor* between the writing sessions, and also changes the form of the ordinal '3rd' to the correct form in Swedish:

I huset finns fyra lägenheter.

Där bor min familj. Huda bor i den 1:a lägenheten. våningen. H adil bor i den 2:a lägenheten våningen och Hiba bor i den 3:a lägenhet och i 3:dje våningen och på den 4:de lägenheten bor syskonen. våningen bor mina föräldrar och andra småsyskon.

In the house are four apartments.

There lives my family. Huda lives at the 1st ~~apartment.~~ floor. Hadil lives on the 2nd apartment floor and Hiba lives on the ~~3st apartment and in 3rd floor and on the 4th apartment live siblings.~~ floor live my parents and other small-siblings.

Excerpt 4. From history log of a story in *The House* project, grade 4

These observed revisions demonstrate the student's awareness and increased knowledge of both vocabulary and the formal linguistic level. These insights can, however, only provide a partial picture in that the classroom context and information about how the writing assignment was conducted in the classroom are lacking. For instance, the teacher could have had discussions and exercises on vocabulary in classroom teaching. This notwithstanding, the instance of revision activities in L2-learners is a good example of the learning potential a tool such as a wiki provides. The teacher and the student both have the opportunity to observe what is going on during the process of writing and together reflect on the knowledge acquired.

Discussion and concluding remarks

The study examined the online text production of primary students in a wiki environment in four randomly selected class-projects. The design of writing assignments was described and the nature of final texts as concerns the length and occurrences of multimodal expressions, as well as writing strategies and the occurrences and types of teacher and peer feedback during text production. The goal was to explore the application of wikis and the functionalities for commenting, discussion and text logging in writing instruction as a learning space to develop writing in young students towards a more advanced, multimodal and reflective composition and revision of text.

As regards design, the students practised composing narrative stories on selected themes. Generally, the writing assignments display an author-centric and individual design, rather than signs of collaborative work. The writing tasks relate to the text's storyline, linguistic considerations, reading of the composed text and, in one of the projects, peer response. The final texts varied in length as a factor of age and gender. The female students (with an exception of one of the projects) and the older students wrote longer texts. In accordance with the guidelines in writing assignments, drawings and digital still images accompanied the texts of the younger students, whereas speaking characters and video clips were additionally embedded in the texts of students in grade 6. Other media, such as animations or links to other websites, were rare and embedded only on the initiative of the students, i.e. they were not part of the instructions from teachers.

Analysis of the history logs of the individual student pages revealed iterative activities with the students reviewing their text on several occasions. Text production was dominated by strategies involving the expansion of texts with new ideas and the occasional revision of the text with a focus on language correctness and content that did not affect, or only locally, the meaning in the text. That is, although the context afforded a writing environment enabling visualization and easy reorganization of text, meaning thus opportunities for students to engage in more advanced expansion and processing of the text, the analysis of the revisions indicated no such advanced strategies in these projects. The composition and revision strategies employed were instead more in the form usually found in free composition (Mak & Coniam, 2008) and among inexperienced writers, namely of adding new text and surface editing (Krashen, 1982; Faigley & Witte, 1981). The influence of teacher feedback on the revision strategies of the students was also found to be very individual. However, examples of revisions indicative of students' development of language awareness were observed among the L2-students.

Comments and discussion in the wikis were utilised to a varying degree in response work during text production, with a frequency ranging from between five times and to no response at all from teachers. Both positive and corrective

feedback concerning the content of text and the linguistic form occurred, with greater demands on the latter in respect of the older students. Peer response as part of the writing task and a simple instruction to students to “*give positive criticism*” resulted in relatively few such occurrences and comments of a more general nature of how good a story might be. Other comments from peers occurred at their own initiative. They were very few, positive and often of the form expressing their presence and thus demonstrating their curiosity and exploration of the writing environment.

In conclusion, the case study shows that, in relation to previous research, the instructional design is a critical area for learning outcomes (see above Warschauer, 2010; Lamb, 2004; Gilbert, Chen & Sabol, 2008). The analyses demonstrate that writing in wikis promotes and facilitates an iterative process of writing, even for primary students, with opportunities for multimodal expression and feedback. However, the students practised on writing individual narrative stories through guidance from teachers and produced texts of similar character and media content, and only novice writing strategies. The students were not engaged in any advanced expansion or revision of their texts, nor did they participate in any elaborated peer response activities or reflective work. The study thus demonstrates a tension between instructional design, on the one hand, and allowing space for the creative advanced expansion and revision of texts that encourages students to take part in participatory and reflective processes of learning on the other.

References

- Arnold, N., Ducate, L., & Kost, C. (2009). Collaborative writing in wikis: Insights from culture projects in German classes. In L. Lomicka and G. Lord (Eds.), *The next generation: Social networking and online collaboration in foreign language learning* (pp. 115-144). San Marcos, TX: CALICO Publications.
- Barton, D. (1994). *Literacy: An introduction to the ecology of written language*. Oxford: Blackwell.
- Barton, M. D. & Heiman, J. R. (2012). Process, Product, and Potential: The Archaeological Assessment of Collaborative, Wiki-Based Student Projects in the Technical Communication Classroom. *Technical Communication Quarterly* 21, 46-60.
- Crystal, D. (2009). *Txtng. The gr8 db8*. Oxford: Oxford University Press.
- Désilets, A. & Paquet, S. (2005). Wiki as a Tool for Web-based Collaborative Story Telling in Primary School: a Case Study. In P. Kommers & G. Richards (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005* (pp. 770-777). Chesapeake, VA: AACE.
- Dix, S. (2006). ‘What did I change and why did I do it?’ Young writers’ revision practices. *Literacy*, 40(1), 3-10.
- Ellis, R. (2009a). Corrective Feedback and Teacher Development. *L2 Journal*, 1(1), 3-18.
- Ellis, R. (2009b). A typology of written corrective feedback types. *ELT Journal*, 63(2), 97-107
- Faigley, L. & Witte, S. (1981). Analysing revisions. *College Composition and Communication*, 32, 400-414.

- Ferris, S. P. & Wilder, H. (2006). Uses and Potentials of Wikis in the Classroom. *Innovate*, 2(5).
- Ferris, D. (2012). Written corrective feedback in second language acquisition and writing studies. *Language Teaching*, 45, 446-459.
- Ferris, D. & Roberts, B. (2001). Error feedback in L2 writing classes: How explicit does it need to be? *Journal of Second Language Writing*, 10, 161-184.
- Fitzgerald, J. (1987). Research on revision in writing. *Review of Educational Research*, 57(4) 481-506.
- Flower, L. & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32, 365-387.
- Gilbert, D., Chen, H. L. & Sabol, J. (2008). Building Learning Communities with Wikis. In R. Cummings & M. Barton (Eds.), *Wiki writing: Collaborative learning in the college classroom* (pp. 71-89). Ann Arbor: University of Michigan Press.
- Grant, L. (2009). 'I DON'T CARE DO UR OWN PAGE!' A case study of using wikis for collaborative work in a UK secondary school. *Learning, Media and Technology*, 34(2), 105-117.
- Hyland, K., & Hyland, F. (2006). *Feedback in second language writing: Contexts and issues*. Cambridge: Cambridge University Press.
- Hård af Segerstad, Y., & Sofkova Hashemi, S. (2006). Learning to Write in the Information Age: A Case Study of Schoolchildren's Writing in Sweden. In L. Van Waes, M. Leijten & C. Neuwirth (Eds.), *Writing and Digital Media* (pp. 49-63). Amsterdam: Elsevier.
- Karasavvidis, I. (2010). Wiki uses in higher education: exploring barriers to successful implementation. *Interactive Learning Environments*, 18(3), 219-231.
- Kovacic, A., Bubas, G., & Zlatovic, M. (2007). Evaluation of activities with a wiki system in teaching English as a second language. *Proceedings of the International Conference "ICT for Language Learning"*, Florence, Italy.
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon.
- Kress, G. (2003) *Literacy in the New Media Age*. London & New York: Routledge.
- Lamb, B. (2004). Wide Open Spaces: Wikis, Ready or Not. *Educause Review*, 39(5), 36-48.
- Lundin, R.W. (2008). Teaching with Wikis: Toward a networked pedagogy. *Computers and Composition*, 24(5), 432-448.
- McGrath, A. L., Taylor, A. & Pychyl, T. A. (2011). Writing Helpful Feedback: The Influence of Feedback Type on Students' Perceptions and Writing Performance. *The Canadian Journal for the Scholarship of Teaching and Learning*, 2(2), 1-14.
- Mak, B. & Coniam, D. (2008). Using wikis to enhance and develop writing skills among secondary school students in Honk Kong. *System*, 36(3), 437-455.
- Merchant, G. (2008). Digital writing in the early years. In M. K. J. Coiro, C. Lankshear & D. J. Leu (Eds.), *The handbook of research in new literacies* (pp. 751-774). New York: Lawrence Erlbaum Associates.
- Parker, K. R. & Chao, J. T. (2007). Wikis as a Teaching Tool. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 57-72.
- Phillipson, M. (2008). Wikis in the classroom: A taxonomy. In R. Cummings & M. Barton (Eds.) *Wiki writing: Collaborative learning in the college classroom* (pp. 19-43). Ann Arbor: University of Michigan Press.
- Richardson, W. (2009). *Blogs, wikis, podcasts, and other powerful web tools for classrooms* (2nd ed.). Thousand Oaks: Corwin Press.
- Scardamalia, M. & Bereiter, C. (1986). Research on written composition. In C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 778-803). New York: Macmillan.

- Sommers, N. (1980). Revision strategies of student writers and experienced adult writers. *College Composition and Communication*, 31, 378-388.
- Thomas, G. (2011). A Typology for the Case Study in Social Science. Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry*, (6), 511-521.
- Tonkin, E. (2005). Making the Case for a Wiki. *Ariadne*, 42. Retrieved from: <http://www.ariadne.ac.uk/issue42/tonkin/>
- Vygotsky, L. (1978). Interaction between learning and development. In *Mind in society*, (Trans. M. Cole, pp. 79-91). Cambridge, MA: Harvard University Press.
- Warschauer, M. (2008). Laptops and Literacy: A Multi-Site Case Study. *Pedagogies: An International Journal*, 3, 52-67.
- Warschauer, M. (2010). Invited Commentary: New Tools for Teaching Writing. *Language Learning & Technology*, 14(1), 3-8.
- Woo, M., Chu, S., Ho, A., & Li, X. (2011). Using a Wiki to Scaffold Primary-School Students' Collaborative Writing. *Educational Technology & Society*, 14(1), 43-54.