

A Qualitative Analysis on Collaborative Learning Experience of Student Journalists Using Wiki

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Abstract. Education in journalism emphasizes internships, apprenticeships, and other opportunities to learn journalism by doing journalism; however, most computer-mediated communication tools do not have such a provision. The fully open structure of Wiki matches the principles of learning journalism while, from a technical point of view, Wiki provides a very easy way for users to report, write and edit. In a case study, a group of undergraduate journalism students were exposed to a student-written Wiki to jointly compose news reporting. Analysis of student journalists' responses to the open-ended questions revealed revision as the core processing capability of Wiki. The motivational factors to revision include accuracy (fact checking), story enrichment, and personal interest toward the news topic. In addition, learners are also affected by the social interactions among the community users within Wiki. The qualitative data shows students both value the process and face challenges in managing the complexity of shared editing.

Keywords: Wikis, Journalistic Writing Processes, Revision, Social Interaction

1 Introduction

Since its introduction in 2004, Wikipedia.org has grown rapidly into one of the largest reference Web sites on the Internet. It is more popular than all other reference sites, including Britannica.com. It is also ahead of all English language news and media sites, excluding only YouTube. Basically, Wikipedia, utilizing the Wiki technology, provides only a platform out of scratch. Wiki is defined and described as “*a type of website that allows users to add, remove, or otherwise edit and change all content very quickly and easily*”[1]. In turn, could we apply the Wiki technology to support teaching and learning of news writing?

In education, Wikis have been applied simply as an efficient means for knowledge sharing between teachers and students such as sharing notes, co-working projects, sharing list, notes, and recipes [2, 3]. Empirical studies suggest that Wikis could

support collaborative knowledge creation and sharing in an academic environment [4] and support teaching and learning [5, 6]. In order to maximize the effective use of a web-based knowledge management system using Wikis, Raman [7] concluded that management should consider a better “fit” between the system and the applied context after a case investigation of the implementation of an emergency preparedness at an American university consortium.

On the other hand, the media industry is one of the first disciplines to grasp the full potential of Wikis. Former reporter has implemented Wikis since 2004 for a social networking web site to allow its users to submit, choose and rank content on news stories (www.digg.com) [8]. Wikis have also helped collect a multi-layered body of knowledge and linked together disparate bits of information in one place, in an example of advertising application [9]. It is argued that news reporting would be an appropriate application and promising area of implementing Wikis to manage the relevant knowledge [10], for example, Wikinews (<http://www.wikinews.org>) and USC Online Journalism Wikis (<http://www.ojr.org/ojr/wiki/>). Wikis have been found employed in a number of mainstream media news sites, for example, Los Angeles Times and its Wikitorial – invite visitors to rewrite the newspaper’s editorials using Wikis.

In particular, journalists practice writing as their single or most important professional activity. Prior literature [11] suggest generic steps in news writing where revising is one of those key steps. Previous study [12] on text production processes including text production (drafting a document), feedback (reader commentary) and revision (revising the text) from a socio-cognitive approach where peer interactions in the social context affect the text production processes in the discourse community of engineering. Prior study suggests an effective model in writing that includes two sections: section one encourages reflection on all aspects of the message leading revision while section two informs error-analysis and further revision [13].

Apart from revision capability that helps the process of writing, Wiki also helps create a community of Wiki users to interact with each other within its environment. Empirical studies found that providing feedback constitutes an integral part of the learning process in writing [14]. Another study investigated [15] the social interaction of peer revision of a group of Spanish-speaking college students enrolled in a second language writing course. They revealed an extremely complex interactive process that highlighted the importance of activating and cognitive processes enhanced through social interaction in the writing classroom. Other study explored group interaction patterns to include power relations and social goals, even among first grade children [16].

As a result, it is important to explore how this emergent technology Wiki interacts with the pedagogical needs of teaching and learning of news writing. The paper is organized as follows: after a brief review of related literature, we describe a case study utilizing a student-written Wiki and the method to collect reflections of users on their learning experience. Focused on the revising processes, the paper analyzes the open-ended responses in order to identify the factors or categories. The last section concludes with a discussion of the implications to instructional design in the implementation of Wiki as a learning medium to news writing.

2 Wikis and Journalistic Process

News writing does not only include the reporting process (e.g., interviewing eyewitnesses and experts, checking facts, writing an original representation of the subject), but also include the editorial review processes (e.g., reporter researches and writes a story, editor ensures that it meets her requirements) in accordance to the objective to produce a consistent product that is informed by the news agency's standards and journalism principles [11]. The essence of Wiki is its fully open and inherently democratic structure that closely matches with the journalistic processes.

The essence of Wiki and its relevance to learning journalistic writing can be summarized by these statements:

(1) *A wiki allows all users to edit any page or to create new pages within the wiki web site while using only a standardized Web browser.* The core activity of learning journalism is news writing. Wiki becomes a learning platform for learners to freely publish content with the minimal barrier. Editorial review is a necessary and important step in the journalistic processes. However, it only allows scheduled update for static web page and for repository database. On the contrary, anyone can edit any page at any time. Therefore, student journalists may easily change their roles from a reporter (contributor) to an editor of their own news writing, or review over other reporters' work. Education in journalism emphasizes reporting, writing, and editing as a whole [17], while Wiki helps integrate the learning of these instrumental skills at a one-stop centralized platform.

(2) *A wiki allows all users to make hyperlinks between wiki pages by easy and simple markups for cross-referencing related topics in order to create context for news stories.* For example, in using one of the Wiki derivatives, MediaWiki (<http://www.mediawiki.org/>), users can simply type the text, say "John" in double parentheses, [[John]] to create a hyperlink to the wiki page "John", if no such page exists, MediaWiki will create such a page in edit form and invite users to add content. For a static webpage, it is difficult to do effectively, and it is hard to change or update, while broken links due to change is also a typical problem. For a repository database, it depends on query and serving engine, where only search is possible in most cases. Nonetheless, Wiki allow anyone to edit and to create cross-links and create topic page for searchers. The essence of journalism is a discipline of verification while Wiki's capability of facilitating these following site links and cross-referencing provide so much an easy method for verification. Users can browse a wiki site in a free-form structure. They can easily search relevant news writing by topic or by keywords. The ease to create and to browse cross-referencing for information, material, or background to provide context within Wiki is the best way to help learners to understand the process of journalism.

Therefore, utilizing Wikis, student journalists can produce news in a similar manner as they work and think every day. They perfect their performance in the repetition of doing, until these elements of journalism become second nature. This is what will breed clarity of purpose, confidence of execution, and public respect [18]. This is the way Wiki which helps the learning of journalistic writing.

3 Method

The selection of sample is no easy as Wiki is still not popular in local higher educational settings. There may be individual applications in certain department or course; however, it may not be comparable to the scale of usage, or relevant to the context under investigation. In view of this, this study designs to select the sample which will provide appropriate data to address the research aims. Therefore, this study chooses a case study method to explore the collaborative news writing process using learning medium Wiki. A student-written Wiki (named, HKNews at <http://hknews.hksyu.edu>) has been setup for the Department of Journalism & Communication at a private local university in Hong Kong. HKNews Wiki is open to the public; however, its primary aim is to support teaching and learning by allowing 548 student reporters in the department to contribute original news reporting. Up till April 15, 2007, there were 10,622 Wiki pages (including discussion and user pages), and among them, there are 4203 news reporting articles, and a total of 54,049 edits (5.09 edits per article), with a total of 2,474,818 view counts in the whole site. There are 1,497 registered users, of which 3 (or 0.20%) are System Operators (Sysops). At the beginning of the second semester, 23 students enrolled in the course, *Application of Information Technology for Communication*, at the Department of Journalism & Communication. They were the subjects in this study.

There was a seminar on February 6, 2007. Before that, a Wiki page was setup about introducing the speaker and the talk. Throughout the week, all the students in the department were encouraged to edit the Wiki page and to add content to it. They might also create links and additional Wiki pages to provide extra information for any content in the article. The 23 students joined this collaborative news writing task for one week.

In order to understanding the processes of collaborative news writing and the individual learners' perceptions on using Wikis, they were asked to complete an open-ended survey expressed in details in the writing processes and their reflection on their experiences in the Wiki environment. For the analysis of qualitative data from the open-ended questions, we copied the responses into a word processor, sorted and grouped them, and labeled the major themes and categories that emerged.

4 Results

4.1 Goals of Using Wiki for the Writing Task

Congruent goals are important to direct learners' effort in collaborative work. It is found that all of the subjects share the common goal that Wikis provide an open platform for people to collaborate together to create and to share updated knowledge. Typical comments included:

- *The goal of wiki is providing a platform for people editing openly and freely. The contributions of different people enrich the information...*

- *To provide and share accurate information on every aspects of everyday life.*
- *Everyone can write and re-write the information without time and place limit, to attain the mutual sharing in knowledge.*

Half of the respondents agreed that goals were achieved while using Wiki. They try and they find that they can really write and edit together to complete the writing task. Typical comments included:

- *Everyone can be writer and editor.....Therefore, the aim collaborative creation and sharing can be achieved.*
- *Everyone can correct other contents freely. The updating is non- stop.*
- *We edit and elaborate more and more information inside the Wiki. We do not only edit Cheung's (the speaker) information but also provide more information based on what she said. Everyone provides his/her own information to expand the Wiki page.*

However, one-fourth of the student journalists have reservation to the attainment of the goals. Goals were achieved only to a certain extent. They point out that, although Wikis are capable to provide such a collaborative platform, it is also highly dependent on the motives of the community users who really use the platform. Moreover, they also care much about the quality of the final writing work, especially the accuracy. Typical comments included:

- *However, some information is wrong and there is not every Wiki user or computer user enjoys being an editing for the Wiki, but a reader.*
- *The success of WIKI depends heavily on the users.*

The remaining one-fourth of the student journalists is more skeptical to the quality of the final writing. The final written work has errors, incomplete and is not organized. They think that the goals are not achieved. Typical comments included:

- *Our work cannot form a complete piece of writing. Some parts of the writing are missing.*
- *It is hard to ensure things written on Wiki are accurate.*
- *The information is provided but is not very organized at all.*

4.2 Satisfaction over Using Wiki for the Writing Task

Nearly half of the respondents are satisfied with the use of Wiki for this collaborative writing task. One quarter of the respondents are satisfied with some reservations. They are content with the use of Wiki, for example, *"I can compare how good or bad writing skills so that I can improve it (my own writing),"* *"I can (easily) see other people's effort in writing the task,"*; *"after you get familiar with the system, it is easy to obtain information, edit a page and link each page,"* *"it is easy to add, edit, remove a page by just few clicks,"* *"As I am a junior user, it quite satisfies me. The process is not hard to handle."*

The remaining one quarter of the respondents are not satisfied with the use of the Wiki environment. The dissatisfaction results reveal a lot of the details in the writing process and the worries. For example, someone does not like working with others (*"I enjoy working from zero but not following others' suit"*); someone does not satisfied with the final quality overall (*"the quality of it (the final writing piece) is not stable"*);

or the accuracy of the final work (“*someone adds fake information easily. It affects the accuracy*”); someone thinks that it is not the appropriate task to work together (“*group work is more suitable for some difficult topics*”); someone has difficulties in the technical aspect (“*We need to memorize several format how to make a title and create a new sub-heading. This may cause problems*”; “*the page may crash when more than one user are editing the same page. It is quite annoying*”; “*The "knowledge" write in the article may not be true. Sometimes, I needed to search for more information to ensure the "knowledge". Moreover, some people only created a new page, but when I click into the link, the page is blank. That's make the Wiki writing not professional.*”)

4.3 Revision

Revision is the key processing capability of Wiki. However, all the users are able to join the writing task does not mean that they really participate. The quality of the final piece depends a lot on the contribution of some of the early users, then the revisions of the then coming users to add new information, to fill the missing gap, to revise inaccurate information, and to format the presentation. Revisions become a major step in the collaborative writing process. However, who really take part in the revision? When do they think there is a need to revise the writing piece? What do they choose to revise? These all affect the final quality of the written work. The best way to understand all of these is to ask the student journalists how they think while utilizing Wiki to complete the writing task.

Key Motivators to Revising Wiki page: Accuracy, Enrichment and Interesting

What determine them to decide to revise his or her Wiki page? Half of the respondents point out that accuracy is the key motive. It seems quite a clear consensus that student journalists cannot bear any inaccurate information on the Wiki. Typical comments included:

- *When there is a mistake or out-dated information, I will revise it.*
- *If I find the mistakes from the Wiki page, I will do my revision for it.*
- *Whether there is wrong information.*

Moreover, more than one-fourth would consider enrichment by adding new information or further details to the writing as the key motive to revise a Wiki page. Typical comments included:

- *When I find new details about the topic, I will revise my page.*
- *Discover new ideas or receive comments.*

It is also interesting to find that two of them will work on the article if they find it interesting. This is important. In a Wiki project, everyone writes. However, it is not necessary everyone writes on the same article. Rather, everyone finds the topic that he or she is most interested in and they would contribute to their best. At last, every article is to their best as each article is contributed or edited by the most interested and capable ones. We also find other reasons. Someone does it because it is required as a course task while another one revise an article when there are few readers.

On the other hand, what if it is not his or her written Wiki page? What determine them to decide to revise others' Wiki page? This may not be the same factors. To edit others' Wiki page requires additional courage to do so. One will have reservation if he or she cares about how other community users view his or her editing behavior.

Accuracy is still the key motive to revise a Wiki page though this is other's contributing work. Half of the respondents list it as the major motive. However, there are also other factors suggested, including completeness (e.g., "*whether there are missing information*"); enrichment (e.g., "*I have new ideas*," "*I want to add the same views with more explanation*," and "*I want to add more information on it.*"); better one's own knowledge (e.g., "*I will (force myself to) check other materials from other websites first before I revise others work*"); interesting article (e.g., "*mainly from curiosity*," "*when I want to see their opinion (to see other's feedback to my revision).*").

Social Interaction in the Writing Process

Social interaction appears in several key steps in the writing process.

In the planning stage, ideas generation and reading Wiki articles become major activities of the writing process. Instead of writing alone, everyone writes on the Wiki site. Any individual would then be a part of the community and be affected by the presence of other users and other written work in the Wiki site. For example,

- *Reading sources is the most significant process of preparing.*
- *First read all text other students have written before writing my own text to avoid repetition which spends me most of the time.*

In the drafting stage, an individual has a lot of concerns. Firstly, s/he knows that there are a lot of other users in the Wiki community. S/he needs to read a lot to take care of others' idea to avoid writing too similarly. Secondly, if s/he needs to build on a previous work, s/he needs to think hard to understand the idea flow before s/he can write further. It is sometimes not easy to understand others, if not one's own writing. Thirdly, there is an anxiety that his or her writing will be revised by others. S/he needs to check on and on to see if there are any changes and if s/he needs to response to those changes. Therefore, the analysis reveals that the presence of other Wiki community users does have impact on the individual learner. It is good to provide a lot of referencing articles for one to generate new ideas; however, it also creates anxiety over too much information. Individual learners typically work independently but are not used to interact with others. This perception will affect much of the effectiveness of peer review in the writing process. Moreover, the unique process capability of Wiki to facilitate editing, on the other hand, post extra burden to individual learners. Typical comments include:

- *The content of articles is too many and too scattered*
- *The greatest problem is that there is already too much information in wiki. I cannot repeat the thing that have already considered. So I must find more information or give up writing.*
- *The greatest problem in using Wiki to write is sometimes I would have problem in understanding other people's writing and don't know how to continue the passage.*
- *It is difficult to start writing because of many suggestions and argue for what we are going to focus. It is hard to find a focus.*

- *The article is easily changed by other users and their work will take the place of mine. The feeling of being replaced is not good.*
- *The greatest problem is the others can change your article content easily. And you can not prevent they add any fake information in the pages.*

After completed the draft, some may stop writing any more while others go on with the revising stage to improve one's writing. Analysis of the reflection reveals that learners do not just totally depend on the system to complete the writing task. They may meet and discuss face-to-face, before, after, or whenever they meet problems in the writing process. Their discussion does not only about the writing details, but also any other problems they meet, especially, technical know-how on presenting their written work on Wiki. Nevertheless, about one-third of the respondents depends totally on the Wiki and do not do any face-to-face discussion. It is important to learn from this analysis that learners find way to solve problem, for example, face-to-face discussion, in addition to the Wiki environment can provide. Typical comments include:

- *I discuss with others before and after I write.*
- *I have discussed with my classmate before I write. After that, if my writing is modified by someone, I will also discuss with them. Through the discussion, we may understand more about the talk.*
- *I discuss the content just because I'm not sure how to write my article or ask others if I have any confusion about the Wiki code I want to use.*
- *Yes, when I cannot sure of the information I find or I cannot find the information.*
- *Yes, I discuss with others before you write, it can make my text contain more ideas, and the accuracy will rise after the discussion.*

Social interaction also affects the revision behavior. In the analysis on the factors to motivate learners to revise his or her Wiki page, one suggests that the browsing hit rate will be one factor (“*I will revise the page when the number of reader is low.*”).

On the other hand, in the analysis of the revision work, some will totally leave the hand to the peers. More than half report that they revise their own Wiki page; the remaining half report that they leave the review and revise job to their peers. This is a conflict in thinking. Individual learners leave the burden to peers to revise their own work; however, individual learners have reservation, or are not accustomed to edit others' work. These conflicting perceptions affect the writing process and finally the quality of their written work. Someone must take the initiative and take the role to edit Wiki page should the collaborative process effective. In fact, some learners do have this division of labor to arrange the role of writer and the role of editor in completing the writing task. Typical comments include:

- *I will ask others to help me revise an article...Because the wrong information can be correct by others.*
- *Only by all people's effort can make an article better and better.*
- *I ask others to revise my work because they are in objective position to look at it and add or delete the information which is relevance...Base on the collaboration view, everyone should not only have the*

responsibility to write but also edit and revise the others work for abundance the whole Wiki page.

- *Ask groupmates to do. Because we have a common consensus that two groupmates are responsible for writing Wiki and others are searching information.*

The respondents also indicate they have different style in dealing with others in completing the written work. Some are very critical (n=7), some are easy come easy go (n=6), while others are more objective and are only based on facts/content (n=5). Some also mention that they want to be critical but have difficulties in directly voicing out their opinion. Typical comments include:

- *I think I am very critical to others' work and this style forces me to seek for a better outcome of the task.*
- *“Easy come easy go” style. Since the Wiki suggests that people do their own work on the platform and everyone has his/ her style. If I am very critical to others' work, other groupmates cannot express their style (views freely) on the project.*
- *My style is based on fact. If they write something wrong, I will ask them to revise. But if they express their own views, I will respect them and let them go.*

In the revising stage, social interaction also has effects on the revision behavior. Individual learners need to go back and review their work before they would actually revise and improve their work. If they never go back, there is no chance to revise one's article. However, what motivates them to go back and read again their own work? The analysis reveal that half of the respondents do regularly review their own work for mistakes, new ideas and enrichment because of their own style, habit or personal goal of self-improvement. However, in addition to individual characteristics, a lot of them also mention the effects from other community users in the Wiki site. They are expecting comments, revision from other Wiki users, and reviewing the changes. They also care about whether their Wiki page is popular by checking the click rate. Typical comments include:

- *Every time when I go back to review my work, I always think that it is inadequate, no matter contents, information or even page editing, it is not enough. If I am a reader, I want more than that.*
- *Yes, I would like to know (if there is) any amendment of my revision, if there is amendment, I would see how different with my writing and learn from it*
- *I look for the click rate of the pages to determine their popularity.*

Wiki as a Learning Medium to Writing: How Learners Really Use the Wiki and Does the Unique Processing Capability of Wiki Really help?

It is found that half of the respondents do not write directly on Wiki. They write on a Word Processor and then copy and paste their draft to Wiki. Less than half write directly on Wiki. Two other respondents do not indicate clearly the way they do. However, after they post their draft on Wiki, all further revision will be done through Wiki. Wiki records all editing log, with time, date and login ID of the editor. Therefore, although we may miss the preliminary planning and drafting process in the

history log, we do record all the revision behavior in Wiki and the learners are interacting with Wiki during the revision process.

5 Discussion, Limitations and Future Research

5.1 Learning news writing could be a continuous iterative revision process

Individual learner's mental model is affected by the task, the learner and the medium in the learning process [19]. The task in this study is to complete news reporting for the speaker and the talk taken place in the campus. The medium can be in a broad sense to include the technology platform Wiki and each other learners in the Wiki community. Analyzed from the self-reflection of participants using the Wiki, individual learners are being affected in their formation of mental models in the different stages of the writing processes through the use of Wiki. This is not just the individual learner alone learning through his or her own cognition. The present of other users, the written work of them, and the act of revision of others' written work on Wiki all influence each individual learner, as reflected from their self-reflection of the writing process.

While revision is a key to writing as found in prior research, the results of this study consistently reveal that individual learners improve their writing in accuracy, enrichment, new ideas, and presentation through a continuous revision process.

5.2 Student Journalists Benefit from Social Interaction in the Process of Learning News Writing

What motivates learners to revise their work? The results find that individual learners do care about the presence of other users, supported by prior studies on social comparison [20]. They care about whether their work has been viewed and/or has been revised. No matter it really takes place or not, this expectation becomes a motive for individual learners to regular review their written work, and in a higher chance to revise their own work for accuracy and enrichment of content or idea.

Wiki provides a platform for all learners to write and post their written work. It keeps a complete record of any further revisions, including the time, date, editor login ID, and the complete changes. Individual learners can revert any of the previous version as s/he likes. S/he can compare and check any changes in content of the written work. This unique processing capability, on the one hand, facilitates writing processes of individual learners; on the other hand, this also improves the interactions between community users of Wiki, to read others' work, to edit others' work, to read any changes made from other users, and to learn from a different perspective to the same issue.

The result of this study supports the wider social perspective on online learning which reveals that students experience isolation, loneliness, and feelings of alienation and low sense of community [21-23]. The findings show that we cannot disregard the

concerns and anxiety of individual learners. These factors would finally affect the motives in using Wiki. For example, the history log of all the prior revisions are complete and useful, however, it is also too much for any individual learners to review once again all the changes every time. Individual learners put great emphasis on accuracy in the written work; however, as it is so easy to edit each others' work, it poses great pressure for each individual learner to validate all the time the truth of for any additional information. There seems lots of information in the Wiki community. To avoid duplication of idea would also put on extra mental burden to individual learners.

5.3 Limitations and Future Research

This is a preliminary study on a specific context, utilizing Wiki for a group of student journalists to collaborate and complete a writing task. The results may only apply with limitations. Future research should expand the study to other disciplines in order to understand better on the impact of Wiki. The results and analysis are based on the self-reflection of respondents who participate in completing the writing task, although this is the appropriate way to capture all the details in understanding the writing process, future research should consider data from various sources, for example, the usage behavior captured by the Wiki. Furthermore, the project groups' design of the present study assumes all group members as contributors and knowledge creators. It would be interesting to see how learning takes place if there are readers (knowledge users) who do not involve in the knowledge creation process, for example, students from other courses. It will also be interesting to see how learning takes place if groups are encouraged to review other groups' work, in addition to his or her group.

6 Conclusion

This preliminary study reflects from the learning experience of a group of student journalists that Wiki provides a unique learning environment to facilitate writing and to enhance learning during the writing process. It provides both a platform for any individual learners to work alone, with the help of the complete editing record; and a platform for all the community users in the Wiki environment to interact with each other and to learn from each other through the revision of each others' written work where the revision behavior is well recorded and transparent to any one of the individual to benefit from it. The qualitative data shows students both value the process and face challenges in managing the complexity of shared editing. Further study in the area, for example, comparing the various use of the Wiki to complete different tasks in different contexts will surely be a promising area to enhance learning and writing.

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