Wiki For Co-writing A Science Dictionary

Chong Moi Lian
moiling8@streamyx.com
SMK Sg. Besi Kuala Lumpur

Tan Bee Hoon
tanbh@fbmk.upm.edu.my
Universiti Putra Malaysia

Mardziah Hayati Abdullah
mardziah@fbmk.upm.edu.my
Universiti Putra Malaysia

Abstract

Web technology is known to make learning more engaging, and language educators have been encouraged to use web tools for instruction. This paper discusses the application of Wiki in fostering collaborative writing in a specific upper secondary class. The study investigates how a group of secondary students learned to use Wiki to co-write a science dictionary, and the effects of Wiki on their collaborative efforts in producing the dictionary. The study employed a single-case observation research design. The single case was a class of 23 Form Four students with only 13 students regularly participating in the Wiki project for three months. The participants' perceptions of Wiki were analysed through interviews and a survey questionnaire. Their behaviours were observed while they were in the process of using Wiki in constructing the science dictionary. Results show that students who actively participated in the project perceived Wiki positively, while those who were apprehensive in writing and contributed the least to the project thought otherwise. Active students who were weak in both ICT skills and English had the most to gain because they improved in both areas by the end of the project. A tangible outcome of the collaborative writing project was that by the end of the third month, a Wiki science dictionary was successfully created online at the Tiki-Wiki website. The findings are useful in offering an alternative approach of teaching English as opposed to conventional methods.

Keywords: Wiki, Web tool, collaborative writing, co-writing, science dictionary.

Introduction and Background

In Malaysia, despite the increasing attention given to English language in recent years, the standard of English among Malaysian students of all levels remains a concern. A general perception is that a good percentage of Malaysian students, despite having learned English for several years, are not able to say or write a sentence in 'decent' English. Among the causes identified, the lack of opportunity for students to use English, either inside or outside the English language class, is the main reason found by researchers in Malaysia (Krishnasamy, 2007; Nair, 2004) as well as some countries in

Asia (Wilhelm & Chen, 2008). Another important reason is the lack of compelling reasons or authentic tasks for students to use English. This has called for actions to increase opportunity for students to use English through engaging them in computer-assisted authentic tasks (Nadzrah Abu Bakar, 2007; Gündüz, 2005). In this aspect, Web technology is known to make learning more interesting, effective and engaging (Neo, 2005). Hence, language educators have been encouraged to use web tools for instruction, and Wiki is such a tool that has been trialed and tested to have supported language learning especially in fostering collaborative effort for the co-production of language (Lund, 2008).

The meaning of "Wiki" is "quick" in Hawaii. The Wiki concept was originally mooted by a computer programmer named Ward Cunningham in 1995. The software was created for the purpose of developing web pages collaboratively. It allows information to be added or edited freely by any user, and the evolving information becomes available freely to the community or any selected audience (Davies, 2004).

The best known example of a Wiki application is the online encyclopedia, Wikipedia (see www.wikipedia.org), which is considered as one of the most active communities on the Web as thousands of people from all over the world are constantly contributing and revising articles in different languages in the online encyclopedia (O'Leary, 2005; Richardson, 2006). This shows that the Wiki model works for projects that require the creation of documents collaboratively by different people from different locations.

The most prominent feature of Wiki is that it can be edited and updated any time by people who are experts in the topic of discussion, therefore the content remains current and relevant (Sen, 2005). Another unique feature is that anyone can upload information easily including those who do not know the complex Hyper Text Mark-up Language (HTML). The user-friendly features of Wiki encourage students to write collaboratively in a non-threatening environment, and thus help them take control of their own learning and improve their language skills.

There are many potential uses of Wiki in education. Several scholars and practitioners have articulated these potentials in Collaborative Software, a collaborative history project by a group of students of six to nine years of age. The students were required to use Wiki to co-write and present their group project. It was found that Wiki has the potential to support knowledge-building networks, and is a useful tool for communities of practice who engaged in collaborative learning (Grant, 2006). In other words, Wiki is basically useful for class or group projects, and it helps define the curriculum as students work on the project.

Wiki can also be used outside the classroom for learners to pursue their individual interests and research agenda. It can be used for online publishing, and Wiki sites can function as information sources (Mejias, 2006). For example, Wiki was used by Davies (2004) as a central location for students to consolidate information such as school news and classroom assignments. In the education environment, Wiki can be used for group work that requires the input of ideas from different people (Clyde, 2005). A collaborative

group project allows members to create a common document together, whereby everyone can contribute and edit the content independently of space and time.

Problem Statement

It is perceived that the standard of English language has declined. The Malaysia Prime Minister Datuk Seri Najib Tun Razak lamented about this problem in an interview when he was the Minister of Education in 2006 (Bernama, 2006, July 11). The main reason 60,000 graduates remained unemployed was because they were not fluent in English and they also lack communication skills (The Star Online, 2011, March 16). The reported situation was rather alarming and showed that the standard of English language had indeed declined.

Many causes have contributed to the decline of the English competence among students. Firstly, with the change of the Malay Language as the medium of instruction in public schools since the 70s, the importance of English was de-emphasised in the Malaysia education system for almost two decades. Further lowering of the status of English was seen in 1995 when English was no longer a compulsory subject to obtain the Secondary School Leaving Certificate (*Sijil Pelajaran Malaysia*). English was then relegated from the second language status to become more or less a foreign language (Chan & Tan, 2006). Except for English classes, Malay language was the language of instruction for every subject in the school curriculum. This has resulted in a decline in English proficiency among the present generation of young Malaysians. They have difficulty in using the language in their daily lives or studies, let alone securing jobs that demand a good command of the language. It is essential for educators to develop intervention strategies to stop English language from further deterioration among students.

On the other hand in recent years, much enthusiasm has been seen in the various aspects of Teaching English as a Second Language (TESL). Many research articles related to English and education have been published in Malaysian journals (for example, *GEMA Online™ Journal of Language Studies* published by the School of Language Studies and Linguistics of the National University of Malaysia), and *The English Teacher* (published by the Malaysia English Language Teaching Association), featuring different ways of teaching ESL. Most of these papers are suggestions on methodologies, techniques, strategies, or what should be taught in the classroom. The research studies can enlighten teachers and educators with ideas for improving the standard of English in the country. However, the studies were mainly concerned with the use of conventional methodology, and only a limited number of studies are related to computer-assisted language learning (CALL) or the integration of information and communication technology (ICT) in teaching English.

In recent instructional practices in school, although ICT has been introduced to enhance teaching and learning, the application is rather limited as most teachers are merely using it for Power-point presentations or presenting an instructional unit on a CD (see, for example, Khairul Adilah & Siti Rafidah, 2009). Under the Malaysia Smart School Integrated Solution (SSIS), schools which are equipped with Internet facilities have wider

options for the teaching and learning of English. With more and more schools equipped with Internet access in the new millennium, web technology should be put to good use in supporting and enhancing instructional processes. Studies have demonstrated that Wiki can be introduced in the teaching and learning of English as it is simple to use (Stafford & Webb, 2006). Students can benefit from the collaborative effort from a Wiki project and thus improve their English proficiency and communication skills. However, using Wiki requires training for teachers and students, or it will remain an under-utilized tool. Moreover, as Wiki is an emerging technology for Malaysian education, it is not known if it will work in local schools, and how students will react to the technology. All these considerations have instigated the design and formulation of the present study.

Conceptual Framework

Apart from the lack of opportunity for students to use English in or out of class, if they ever get to practise in English, the context is often contrived and artificial. In the traditional classroom, a writing task is often not as authentic enough as computer-mediated communication such as e-mail or writing for Internet publishing. In this aspect, Wikipedia represents an interesting model for creating authentic writing activities. Forte and Bruckman (2006) propose that collaborative publishing on Wiki can overcome the problem of in-authenticity of traditional classroom writing. Four different dimensions of authentic activities can be achieved through writing assignments in Wiki, which are personal, disciplinary, real world and assessment authenticity. Usually disciplinary authenticity suffers in traditional writing assignments because the purpose, content, and form of written artifacts emerge from students' understanding of teachers' instructions rather than from a natural need to communicate a message well in a particular discipline. Forte and Bruckman (2006) view such assignments as having weak connections to the real world since they are often irrelevant beyond the classroom setting.

Wiki can provide a platform for authentic writing experience to take place. In the present project, the feasibility of asking students to interact online using Wiki was realised as they wrote collaboratively to produce a Wiki science dictionary. The authenticity of purpose in the writing activity was clear. The present project leverages on the Wikipedia model of collaborative authorship with added support for disciplinary practice and authentic assessment. Students are exposed to real discourse of knowledge-creation in an authentic situation where Wiki serves as a medium in enabling real communication to take place. In deciding what scientific terms to include and how the explanations should be phrased, students need to negotiate among themselves, and later evaluate or comment on each other's written work. The peer comments and evaluation reflect the existence of an authentic audience. The experiences of students participating actively in Wiki and communicating in the discussion forum are valuable in the real world situation for language learners by providing them increased opportunity to interact in the target language. The task of collaborative writing in the context of ESL can help language learners make more effective transition to using the language in real-world setting, as they will draw upon their experiences and skills to communicate, negotiate, build consensus, cooperate, and learn from one another. In short, collaborative writing using

Wiki for knowledge-building and learning is an authentic activity for students of ESL. The practice reveals that the authenticity of purpose can be achieved by Wiki.

The relationship among the use of Wiki, learning theories, collaborative writing, and authenticity in co-producing a Wiki document is conceptualised to form the framework in Figure 1.

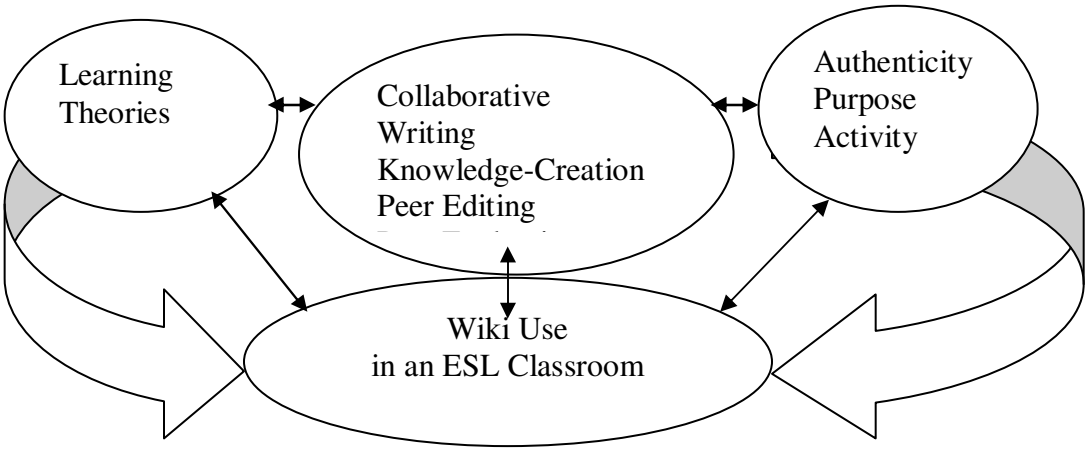

Figure 1: Collaborative writing using Wiki

Purpose of the Study

The purpose of the present study is to explore the use of Wiki in a non-obligatory class and to analyse its effects in engaging students to write in English collaboratively. The study aims to investigate how secondary science-streamed students use Wiki to produce a dictionary of scientific terms in English. The specific objectives of the study are: to investigate the students' perceptions in terms of motivation and attitude in using Wiki, and to analyse the impact of Wiki on collaborative writing among secondary school students.

Methodology

This study was carried out in a secondary school in Kuala Lumpur. A total of twenty three students participated in the training of using a Wiki tool to co-write a Wiki-science dictionary. However, only thirteen of them were regularly attending the weekly Wiki writing class. Seven of them were female (56.8%) and six were male (46.2%). All of them were from the Chinese ethnic group and their first language was Chinese. All of them were Form Four students and their age ranged between 15 – 16 years old. The students' English proficiency levels were quite high as more than half of them obtained Grade A in English in the lower secondary public examination (PMR). One third scored Grade B, and less than 10% Grade C.

The study followed the investigation procedure illustrated in Figure 2. A pilot study was done prior to the commencement of the Wiki dictionary writing project mainly to try out the research procedure and the questionnaires. Students met once a week for an hour for three months in the second semester of the academic year. The writing project was carried out in the school computer lab, which was equipped with intra-school network and Internet connection.

An attitudinal survey was administered at the beginning and end of the project. The pre-project questionnaire (Appendix A) was to obtain participants' demographic information and their general feelings in using a Wiki tool for online collaborative writing in English. At the end of the project, a post-project questionnaire (Appendix B) was given out to obtain feedback about the project and to determine if there was a change in participants' motivation and attitudes.

A training workshop on using the Internet and the Wiki tool was conducted before the project commencement. A Wiki tool known as Tiki Wiki was used, and it was available at http://www.my-jl.com/wiki (see Figure 3 for a screenshot of the project website). This site is now closed as it requires maintenance. However, a hardcopy of the Wiki Science Dictionary has been printed and is available for inspection by any interested researcher or practitioner.

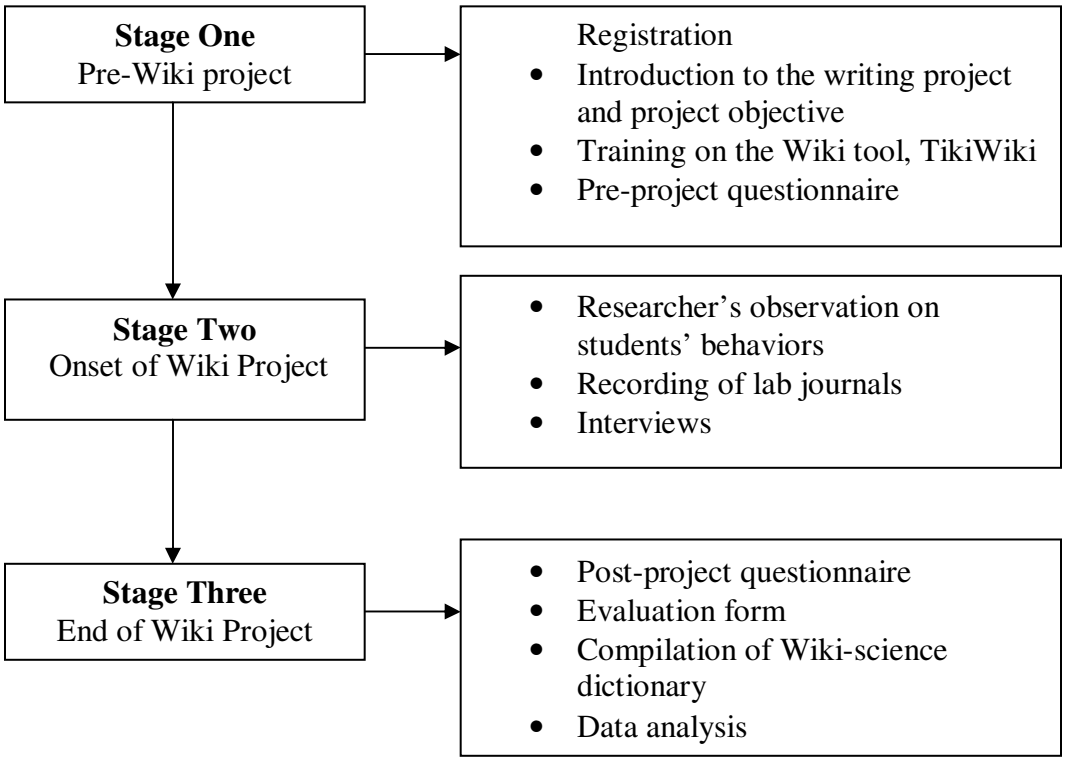

Figure 2: Research procedure

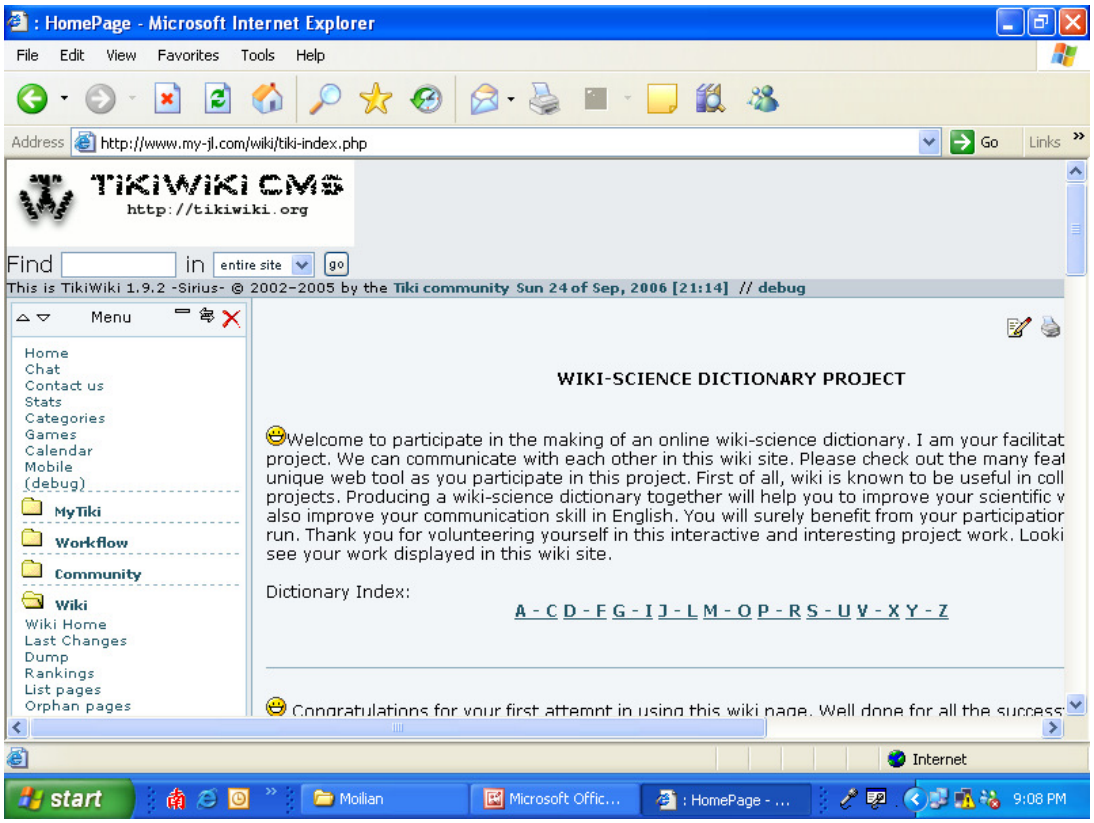

Figure 3: A screenshot of the Wiki science dictionary

Students were encouraged to share and exchange information during the entire project. Students with low Internet literacy were identified to pair with students who were more competent in ICT. The students were required to find out the meaning and write an explanation for new words found in their Science text book and the accompanying CD-ROM. The students were required to review the explanations to new terms written by their peers. The peers had to comment, add and edit their friends' written work online at the Tiki Wiki website. Student behaviors and the progress of the Wiki activities were recorded in the lab journal. By the end of the project, students' written product was compiled and printed to produce a Wiki Science dictionary (see Figure 4 for some examples of students' dictionary entries).

Common Cold
- Common cold is a viral infection that causes stuffed up, runny nose and sneezing. It is not a serious illness, but it can cause discomforts that lead to the loss of appetite, difficulty in breathing and insufficient sleep. The risk of getting common cold can be reduced by making the environment clean and free from dust.
~by yin torng

Earth
- the planet that have living things
- the third planet near the sun
- the nearest planet to Venus

~by darigan

Figure 4: Examples of Wiki Science dictionary entries

Results and Discussion

Data resulting from the investigation of the study are organised and discussed under separate headings as follows.

The use of Wiki in the school

Results from the pre-project questionnaire show that all the students had personal computers and Internet access. All of them also had at least two other Information Technology (IT) devices at home such as CD writers and cell phones. Thus, they seemed to be quite familiar with the basic use of technology. Figure 5 shows the different IT devices the respondents had at their own homes.

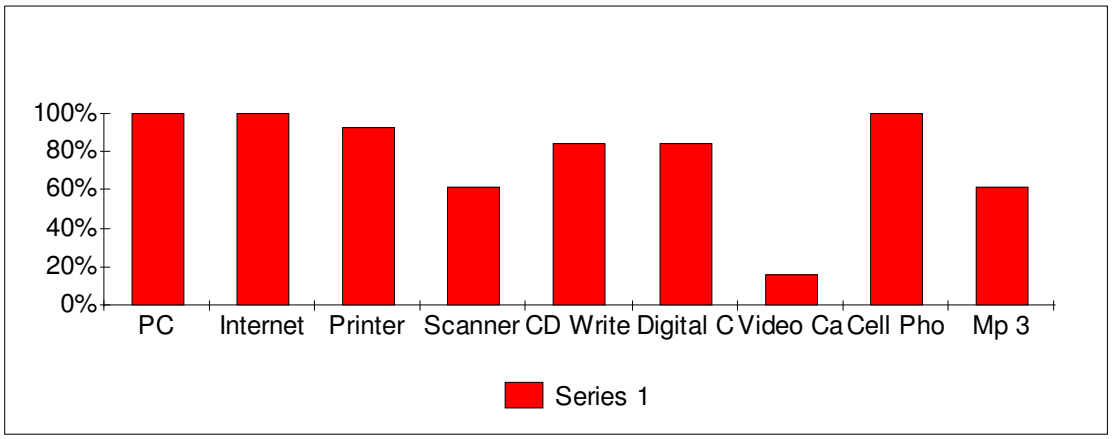

Figure 5: IT devices owned by the respondents

With regard to online surfing or Internet time, most students were either spending between 3-6 hours (46.15%), or more than 9 hours (23.1%) per week. Only a small percentage of the students (15.38%) were spending 1-3 hours or 6-9 hours surfing the Internet. Cleary, all the students surfed the Internet at least one hour per week for various reasons particularly chatting or blogging.

The results obtained from questions pertaining to ICT skills show that most of the respondents were very confident in using the Internet and e-mail. Many of them rated themselves as 100% competent in these skills. Only two students were averagely literate with most of the computer tasks. The results also indicate that most of the respondents' were quite knowledgeable in ICT skills such as e-mail, word processing and computer management skills (between 77.36% - 100%). These skills were important for them to carry out the writing and communication tasks of the Wiki project.

Perceptions to using Wiki

The students' perception of the Wiki project was gathered from the post-project questionnaire. The overall data show that their perceptions were more positive than negative. High ICT students (46.15%) showed very high interests and positive perceptions on all aspects of the Wiki writing project, such as the learning of English language, evaluation of the Wiki project, benefits obtained from the collaborative writing project, and the gain in self-awareness. Low ICT students (15%) gained both ICT knowledge and also improved their English language through the Wiki project.

Results from observation by the facilitator

Quite unexpectedly, there was a lack of active peer review on work done by students at the Wiki site. Contrary to the literature reviewed, these students were found to be more concerned to publish their own work than commenting their peers'. The students' writing as well as the patterns of their participation on the Wiki site were analysed and evaluated from the Wiki archives. Generally the content of their writing was biased towards those who were technologically savvy because most of their discussion was about computer techniques or skills, for example, inserting a picture in their dictionary entries. However,

if low ICT students chose to put in more effort on writing, then they were able to progress better in both ICT and English skills than those who were more skillful in ICT.

The results in Figure 6 show the percentage of writing in Wiki contributed by three different types of contributors. Type I were the most active contributors, followed by Type II being moderately active and Type III were the least active writers at the Wiki site. It is interesting to note no significant relationship between competence in ICT skills and the amount of contribution in writing. Figure 4 shows that some ICT competent students (Type III writers) did not contribute much in the Wiki collaborative writing project.

Nevertheless, Wiki was extremely useful for the competent users. An analysis of the content and patterns of written work by these students found that those who were ICT savvy could write better in terms of giving better definitions or explanations of scientific terms and more sophisticated illustrations in the Wiki writing project.

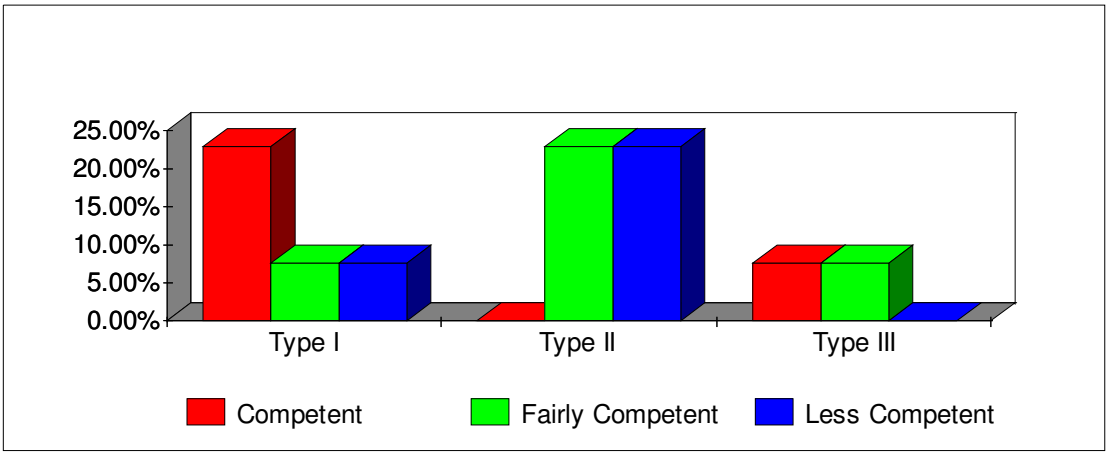

Figure 6: Different types of student writers and their online contributions

Structured interview

The Type I active users were the conscientious writers comprising one third of the total respondents (30.8%). In the interview, students revealed that they usually read their friends' latest edits before they began their own writing. The combined activities of reading and writing at the Wiki site enabled the students to gain more knowledge. They also appreciated the team effort in contributing to the content for their Wiki dictionary. All active users expressed their interests in continuing the project to get a richer compilation of scientific terms in the dictionary. The respondents felt that co-producing the online dictionary had given them a sense of accomplishment and pride.

When the respondents were asked why they did not make much visible comments on the content written by their friends, most of them frankly answered that they simply adhered to the general online concept of What-you-see-is-what-you-get (WYSIWYG). However, some of them felt that they did not want to embarrass their friends as all of them were equal being all learners. Likewise they also did not expect any comments from their

peers. They opined that an authority figure such as a language teacher would be more appropriate to comment and correct the mistakes they might have made.

The Type II moderately active users were less active, and hence they did not obtain much benefit from participating in the project. They did not agree that the Wiki writing project would help them much in learning English and ICT skills because they did not enjoy the activity of writing together. When further questions were asked, it was found that their lack of contributions was not related to Wiki; rather, it was their lack of interests in general. They said they would use Wiki if the topic was related to their interest or hobby, not something that reminded them of homework such as the science dictionary.

A total of five respondents were classified as Type III (38.5%). They expressed the fear of writing due to their inability to write well in English. They also disliked the idea of exposing their writings for their friends to comment on. The sense of threats cum fears discouraged them from writing actively and thus caused them to be mere spectators in the project. However, reading their peers' works did help them improve their understanding of the scientific terms.

Findings

A number of findings can be deduced from the study. The results from the post-project questionnaire revealed that if students were more active in their participation in the Wiki writing project, the activity would help them generate positive feelings during and after the project. The results obtained from the observation are in line with the post-project questionnaire findings. Firstly, there was no significant relationship between competence in ICT skills and the amount of contributions in writing. None of the learners who were less competent in ICT skills was inactive (Type III) writers. The low ICT students had shown some improvement in both ICT knowledge and English at the end of the Wiki project. This indicates that students would gain positively in these two areas through using Wiki if they put in more effort in using it to write. The finding is in line with the literature reviewed that Wiki is a simple web site where anyone with basic computer skill can create, edit and construct knowledge together with other members in the discourse community (Borja, 2006; Ferris & Wilder, 2006).

The findings from observing students' contributions and writing patterns further revealed that students who did not mind criticism or comments on their writing perceived Wiki as an interesting tool for collaborative projects. The combined activities of reading and writing in the Wiki site have also enabled most of the students to gain more content area knowledge. The students perceived that the Wiki project was interesting and their command in English had improved after the project. The area that they improved most was the acquisition of scientific vocabulary. It was also observed that they were more sensitive to spelling and syntactic accuracy in paying more attention to language forms as the demand of the task required them to think about the language when they composed for the dictionary. This is in line with the findings of a recent study by Kessler (2009)

who found that his non-native speaker subjects tended to pay attention to language accuracy in a Wiki-based collaborative writing project.

The findings of this study are a reflection of how the learning of English and ICT skills can happen simultaneously in a Wiki collaborative writing project. The successful production of the Wiki-science dictionary shows that collaborative writing using Wiki should be encouraged in ESL instruction.

Conclusion

In general, the active students felt that Wiki was an interesting tool for collaborative work. However, the inactive users perceived Wiki somewhat negatively. On one hand they perceived that Wiki was too structured and writing was difficult, but on the other they reported that the reading done at the Wiki site had helped them in acquiring new vocabulary. The active users who claimed that they have improved in the learning of English language through the Wiki work perceived that the Wiki tool they used, i.e. Tiki Wiki, failed to meet their social needs as it was overly structured for discussion. However, this shortcoming has been corrected by more recent Wiki tools such as Wetpaint (see www.wetpaint.com) that provides an accompanying forum for users to interact online.

Another interesting conclusion is that high ICT knowledge and skills were not necessarily required for students to participate in a Wiki project. It was the interest and the perceived value of Wiki that really mattered. If students valued the Wiki project, they would try to collaborate and contribute to the content to make the project a success.

Despite some problems (e.g. zero or limited Internet access) encountered by the respondents in the writing process, a Wiki science dictionary containing a corpus of 200 over scientific terms was eventually produced within the time span of three months. The successful production of the Wiki science dictionary was the fruitful result of the students' collaborative effort.

Acknowledgement

This study is part of a larger project on the applicability of Wiki technology in language learning funded by Fundamental Research Grant Scheme from the Ministry of Higher Education of Malaysia (Code: 03-10-07-287FR).

References

Borja, R. (2006). Educators experiment with student-written "Wikis". *Education Week*, *25* (30), 10-12.

Chan, S. H., & Tan, H. (2006). English for mathematics and science: Current Malaysian language-in-education policies and practices. *Language and Education, 20*(4), 306-321.

Clyde, L. A. (2005). "Wikis". *Teacher Librarian, 32*(4), 54-57.

Davies, J. (2004). Wiki brainstorming and problems with Wiki based collaboration. Project Report for the degree of Information Processing in the Department of Computer Science at the University of York (Online). Retrieved August 1, 2006 from http://www.users.cs.york.ac.uk/~kimble/teaching/students/Jonathan_Davies/Jonathan_Davies.html

Ferris, S., & Wilder, H. (2006). Uses and potentials of Wikis in the classroom. *Innovate 2* (5). (Online) Retrieved August 31, 2006 from http://www.innovateonline.info/index.php?view =article&id=258

Forte, A., & Bruckman, A. (2006). From Wikipedia to the classroom: Exploring online publication and learning. *Proceedings of the 7th International Conference of the Learning Sciences*. Bloomington, Indiana, June 2006.

Grant, L. (2006). Using Wikis in schools: A case study. (Online) Retrieved August 14, 2006 from http://www.futurelab.org.uk/research/discuss/05discuss04.html

Gündüz, N. (2005, October). Computer assisted language learning. *Journal of Language and Linguistic Studies*, *1*(2), 193-214.

Improve on English or lose out in job market, undergrads told. *The Star Online*, March 16, 2011. Retrieved April 21, 2011 from http://thestar.com.my/news/story.asp?file=/2011/3/16/nation/8279225&sec=nation

Kessler, G. (2009). Student-initiated attention to form in Wiki-based collaborative writing. *Language Learning & Technology, 13*(1), 79-95.

Khairul Adilah Ahamd & Siti Rafidah Muhamat Dawam (2009). ICT implementation on private higher learning institutions (Northern Malaysia). *Proceedings of the Conference on Scientific and Social Research,* 14-15 March 2009. (Online). Retrieved April 3, 2010 from http://ikict.upsi.edu.my/index2.php?option=com_docman&task=doc_view&gid=6&Itemid=37

Krishnasamy, H. N. (2007). Vision 2020: Pathways in English Language Acquisition. In Tan Bee Hoon, Washima Che Dan, Mardziah Hayati Abdullah, Faiz Abdullah, Noritah Omar & Rosli Talif (Eds.) (2007), *Theoretical and Practical Orientations in Language and Literature Studies* (pp. 1-14). Pearson Longman.

Lund, A. (2008). Wikis: A collective approach to language production. *ReCALL, 20*(1), 35-54.

Mejias, U. (2006). Writing and Wikis. (Online) Retrieved May 23, 2006 from http://www.educause.edu/pub/er/erm04/ erm0452.asp?bhcp=1

Nadzrah Abu Bakar (2007). English language activities in computer-based learning environment: A case study in ESL Malaysian classroom. *GEMA Online™ Journal of Language Studies, 7*(1), 33- 49.

Nair, R. (2004). Bringing the real world into the ESL classroom through poetry. *The English Teacher, XXXIII.*

Neo, M. (2005). Web-enhanced learning: Engaging students in constructivist learning. *Campus-Wide Information Systems, 22*(1), 4-14.

O'Leary, M. (2005). Wikipedia: Encyclopedia or not? *Information Today 22*(8), 49-53.

Richardson, W. (2006). The educator's guide to the read/write web. *Educational Leadership, 63*(4), 24-27.

Sen, J. (2005). Work the Wiki way. (Online) Retrieved May 23, 2006 from http://startechcentral.com/tech/story.asp?file=/2005/8/23/prodit/11688166&sec=prodit

Stafford, T., & Webb, M. (2006). What is a Wiki and how to use one for your projects. (Online) Retrieved August 1, 2006 from http://www.oreillynet.com/pub/a/network/2006/07/07/what-is-awiki.html?page=3

Wikipedia (2006). The free encyclopedia. (Online) Retrieved September 1, 2005 from http://en.wikipedia. org/wiki/E-Learning

Wilhelm, K. H., & Chen, B. P. (2008). University teachers and students' perceptions of ELT methodologies and their effectiveness. *GEMA Online™ Journal of Language Studies, 8*(2), 79-102.

Appendix A

Pre-project questionnaire

Section A: **Personal profile**

Please tick √ your answers.

1. What is your age?
   ☐ < 14 years ☐ 14 – 15 years ☐ > 15 years
2. What is your gender?
   ☐ Male ☐ Female
3. What is your ethnic origin?
   ☐ Malay ☐ Chinese
   ☐ Indian ☐ Others (Please specify): ……
4. What is your English Language grade in PMR?
   ☐ A ☐ B ☐ C ☐ D ☐ E
5. Do you have the following devices at home? Please tick √.

Computer	☐
Internet access	☐
Printer	☐
Scanner	☐
CD writer	☐
Digital camera	☐
Video camera	☐
Laptop computer	☐
Cell phone	☐
MP 3 player	☐

6. How often do you surf the Internet in a week?
   ☐ Never
   ☐ 1 - 3 hours
   ☐ 3 – 6 hours
   ☐ 6 - 9 hours
   ☐ > 9 hours

ISSN: 1675-8021

7. What are your reasons of using the Internet? Please circle the number of your choice.

	Seldom	Sometimes	Always
a. Search information for school assignments.	1	2	3
b. Play games	1	2	3
c. Online chatting	1	2	3
d. Watch movie	1	2	3
e. Read news	1	2	3
f. Meet new friends	1	2	3
g. E-mail	1	2	3
h. Blogging	1	2	3
i. Participate online forum	1	2	3
j. Others (Please specify):	1	2	3

……
……

8. Based on Question 10, which is your <u>main</u> purpose of using the Internet? Why?

……
……

Section B: General ICT knowledge and skills

Please indicate your level of confidence in using the following computer programs to carry out the given tasks. Please circle the number of your confidence level.

Word processor	**Least confident**	**Moderately confident**	**Most confident**
• Use simple formatting commands such as bold, italics, centering, font size etc	1	2	3
• Use a spell checker	1	2	3
• Import text and images into a word processed document	1	2	3
• Include tables in a document	1	2	3
• Lay out text and images	1	2	3
• Use templates for standard documents	1	2	3
• Create new document templates	1	2	3
• Divide the page layout into columns	1	2	3
• Use headers and footers	1	2	3
• Use the drawing tools to create shapes and Autoshapes	1	2	3
• Mail merge	1	2	3
• Save a document in various file formats including HTML	1	2	3
Email program			
• Send and receive e-mail messages	1	2	3
• Attach files to outgoing e-mails	1	2	3
• Create new contacts in address book	1	2	3
• Create a distribution list of contacts	1	2	3
• Sort messages and file in created folders	1	2	3

Presentation manager			
• Create a basic presentation package	1	2	3
• Add clipart to slides	1	2	3
• Modify colours of text, lines and space on a slide	1	2	3
• Edit a master slide	1	2	3
• Incorporate a data chart or graph	1	2	3
• Incorporate an organizational chart	1	2	3
• Rearrange slides within a presentation	1	2	3
• Produce appropriate handout formats	1	2	3
Using the Internet			
• Access an Internet site via its website address	1	2	3
• Use search engines to find information	1	2	3
• Use logical operators when searching for information	1	2	3
• Use bookmarks / favourittes for marking sites	1	2	3
• Download files from the internet	1	2	3
• Save text and images from web pages	1	2	3
Computer management			
• Locate and run a programe (software application)	1	2	3
• Use CD-ROM-based software	1	2	3
• Organize your electronic files into folders	1	2	3
• Search for files on the computer system	1	2	3
• Move files between drives (e.g. from A: to I)	1	2	3
• Print to various networked printers	1	2	3
Computer hardware and environment			
• Connect up the computer and its peripherals	1	2	3
• Use a scanner for copying images	1	2	3
• Use a scanner for capturing text (OCR)	1	2	3
• Use a digital camera for capturing images	1	2	3
• Use a data projector	1	2	3
• Aware of computer security, copyright and the law	1	2	3

Thank you for completing this questionnaire.

ISSN: 1675-8021

Appendix B

Post-project questionnaire

Describe your feeling when you were required to write and edit during the Wiki-science dictionary project. Circle on the most appropriate five points Likert scale as indicated as follow.

	Strongly disagree	**Mildly disagree**	**Neutral**	**Mildly agree**	**Strongly agree**
Language interest and values					
1. I feel happy to read and write in English in the project.	1	2	3	4	5
2. I enjoy writing and editing your friends' work.	1	2	3	4	5
3. Reading and writing helped me to improve my English proficiency.	1	2	3	4	5
4. I am not afraid to write because my classmates understand me.	1	2	3	4	5
5. I am worried that my classmates will criticize my writing because they are better than me in English.	1	2	3	4	5
6. I am interested to write in English because I get to know more about Science.	1	2	3	4	5
7. Writing is easy because the computer can help me check spelling and grammar.	1	2	3	4	5
8. I am worried because I don't know what to write.	1	2	3	4	5
9. I prefer to write on my own.	1	2	3	4	5
10. Only the teacher can correct my mistakes.	1	2	3	4	5
11. I feel lost because I don't know where to find the information and content to write.	1	2	3	4	5
12. I learned a good deal of new words in doing the project.	1	2	3	4	5
13. The writing project prepared me for writing in English in other class.	1	2	3	4	5
14. I want to continue writing to my friends through the Internet after the Wiki-science dictionary project.	1	2	3	4	5
Evaluation of the Wiki project					
15. The time spent in doing the project was well worth.	1	2	3	4	5
16. My attendance for Wiki class has been better than other class.	1	2	3	4	5
17. I looked forward to the Wiki class.	1	2	3	4	5
18. I excited to discuss the Wiki project	1	2	3	4	5

outside the class.					
19. I was stimulated to do extra reading about other uses of Wiki for learning.	1	2	3	4	5
20. Using Internet and Wiki tool to complete the project was valuable to me.	1	2	3	4	5
21. I participated actively in the discussion forum.	1	2	3	4	5
22. The product of the Wiki-science dictionary Project was appropriate for the effort required.	1	2	3	4	5
23. I feel proud to have co-produced the Wiki-science dictionary.	1	2	3	4	5

Collaborative learning

24. I developed new friendship through writing on the project.	1	2	3	4	5
25. I developed greater awareness of other people's style of writing.	1	2	3	4	5
26. Writing to one another and the whole class is more fun than writing on my own.	1	2	3	4	5
27. I became interested in group projects related to Wiki collaboration.	1	2	3	4	5
28. I learned to value new viewpoints.	1	2	3	4	5
29. I increased my appreciation of other students in this project.	1	2	3	4	5
30. I developed a greater sense of personal responsibility.	1	2	3	4	5
31. Collaborative learning was interesting.	1	2	3	4	5
32. Collaborative learning in this project contributed to my learning.	1	2	3	4	5
33. I understand why we have to work as a group in this project.	1	2	3	4	5
34. I actively participated in the group work.	1	2	3	4	5
35. I helped classmates learn.	1	2	3	4	5
36. My contribution to this group project was important.	1	2	3	4	5
37. I felt included and valued when working with other students.	1	2	3	4	5
38. My friends' comments on my writing helped improve my writing.	1	2	3	4	5
39. In this project, I learned to evaluate the quality of the arguments and opinions of others.	1	2	3	4	5
40. As a result of this project, I began to challenge the opinions of others.	1	2	3	4	5

41. I gained analytical skills in this project that I use in other projects.	1	2	3	4	5
42. I gained a lot of knowledge in doing the project together with my friends.	1	2	3	4	5

Self-awareness in learning

43. My awareness of my own interests and talents in ICT has increased.	1	2	3	4	5
44. I have learnt more than I expected.	1	2	3	4	5
45. I developed more confidence in myself.	1	2	3	4	5
46. I tried to relate what I learned in this project to science subjects.	1	2	3	4	5
47. I utilized all the learning opportunities provided in this project.	1	2	3	4	5
48. I was satisfied with the educational experience this project provided.	1	2	3	4	5
49. This project has given me an enduring interest in science topics.	1	2	3	4	5
50. In this project, I learned that making mistakes is part of the learning process.	1	2	3	4	5

Thank you for completing this questionnaire.

About the authors

Chong Moi Lian is a senior teacher at SMK Sg. Besi. She obtained her MA (ESP) from Universiti Putra Malaysia.

Tan Bee Hoon (Ph.D) is Associate Professor of Applied Linguistics at Universiti Putra Malaysia. Her research interests are in CALL, CMC, ESP and learning assessment. She is the chief editor of *The English Teacher* from 2008, and an Editorial Board member of the *Pertanika Journal of Social Sciences and Humanities*.

Mardziah Hayati Abdullah (Ph.D) is Associate Professor of English Studies at Universiti Putra Malaysia. She conducts research and publishes in the areas of computer-mediated communication, media discourse and language in society. She was the chief editor of *The English Teacher* from 2006-2007.