การบูรณาการเทคโนโลยีเว็บ 2.0 เพื่อพัฒนา ความสามารถทางการเขียนภาษาอังกฤษ ของนิสิตมหาวิทยาลัย[1]

Integrating Web 2.0 Technologies to Develop English Writing Competency of Thai University Students[1]

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์สองประการ คือ (1) เพื่อศึกษาประสิทธิภาพการ
ใช้เทคโนโลยีเว็บ 2.0 เพื่อพัฒนาทักษะความสามารถทางการเขียนภาษาอังกฤษเมื่อ
เปรียบเทียบกับกลุ่มที่ไม่มีการใช้เทคโนโลยีเว็บ 2.0 (2) เพื่อศึกษาถึงขอบเขตความแตกต่าง
ระหว่างกลุ่มที่ใช้ใช้เทคโนโลยีเว็บ 2.0 และกลุ่มที่ไม่ใช้เทคโนโลยีเว็บ 2.0 ในด้านแรงจูงใจ
ของนิสิตที่มีต่อการสอนการเขียน การพัฒนาทักษะการเขียนและการเรียนแบบร่วมมือ
กลุ่มตัวอย่างในการวิจัยครั้งนี้เป็นนิสิตมหาวิทยาลัยทักษิณ จำนวน 60 ราย กลุ่มตัวอย่าง
ที่ใช้ในการวิจัยครั้งนี้ได้มาโดยวิธีการสุ่มอย่างง่าย วิเคราะห์ข้อมูลโดยใช้การเปรียบค่าเฉลี่ย
ของกลุ่ม 2 กลุ่มที่เป็นอิสระจากกัน (Independent t-test) ผลการวิจัยพบว่า กลุ่มทดลอง
มีผลสัมฤทธิ์ทางการเรียนทักษะการเขียนภาษาอังกฤษสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญ
ทางสถิติที่ระดับ 0.05 นิสิตมีทัศนคติที่ดีต่อการเรียนทักษะการเขียนภาษาอังกฤษ
ในสามประเด็น คือ ชั้นเรียน การพัฒนาทักษะการเขียนและการเรียนแบบร่วมมือมี
นัยสำคัญทางสถิติที่ระดับ 0.00 ผลการสัมภาษณ์กลุ่มตัวอย่าง พบว่า นิสิตมีความคิดเห็น
ต่อการใช้เทคโนโลยีเว็บ 2.0 ในทางบวกมากกว่าทางลบเนื่องจากนิสิตคิดว่าเทคโนโลยี
เว็บเป็นเครื่องมือที่มีประสิทธิภาพในการทำงานกลุ่มและยังช่วยพัฒนาความสามารถ
ทางการเขียนภาษาอังกฤษ

คำสำคัญ: การเทคโนโลยีเว็บ 2.0 ความสามารถทางการเขียนภาษาอังกฤษ
นิสิตมหาวิทยาลัย

Abstract

The purpose of this study was two-fold: (1) to investigate the effectiveness of web 2.0 technologies in terms of students' English writing competency as compared to those with no web 2.0 technologies-applied classes, and (2) to examine the extent to which web 2.0-based classes differ from non-web 2.0 classes regarding students' attitudes towards writing class, writing skill improvement and cooperative learning. A sample group of 60 university students at Thaksin University participated in this study. Simple random sampling was used to select the sample group. The t-test was used to analyze the data. The results revealed that the learning achievement on English writing among participants using web 2.0 technologies was higher than the learning achievement of those taught through the conventional face-to-face instruction at a significance level of 0.05. The students had good attitudes towards learning English writing with the web 2.0 technologies in three aspects: class, improvement in writing skill and cooperative learning at a significance level of 0.00. Based on the interview result, the students expressed more positive than negative opinions as they thought that web 2.0 technologies offered them effective tools for completing their group work as well as enhancing their writing competency.

Keywords: Web 2.0 Technologies, English Writing Competency, University Students

Introduction

Studies on collaboration in L2 writing in the past several years have mainly emphasized peer response in which students provide feedback on each other's writing (e.g. Zhu, [1]). Collaborative writing, which is the joint production of a text by two or more writers, has been much less examined even though it is extensively used outside second language classrooms [2]. Especially, collaborative writing processes have rarely been examined [3]. Present technologies such as web 2.0 technologies, offer substantial opportunities for language educators and researchers a new way into the L2 collaborative writing process and potential technologies for collaborative writing activity [4].

Thura [5] investigated writing strategies employed by high and low English proficiency students at Mahidol University. The result of the study showed that the high English proficiency students employed a variety of writing strategies with more frequency than low English proficiency students. Saraiwang [6] conducted a study of writing strategies in the writing process employed by senior English major students with high and low writing abilities at Naresuan University. The findings revealed that the students with high writing ability employed jotting down words in the prewriting step more than did students with low writing ability, and poor students relied on "asking for help" in the while-writing step.

Many research on Web 2.0 learning environments remain in its early stage of development [7-8], but results of literature have revealed many advantages of using web 2.0 technologies in L2 writing. Generally, web 2.0 technologies ease collaborative process, facilitate interaction, and enhance writing development [9]. Web 2.0 technologies allow students to utilize these tools to enhance collaborative writing at their own time and pace. Web 2.0 technologies help students to gain different perspectives of writing topics and develop better writing practice regarding development of ideas, text structure or cohesion or grammar. These tools

can also encourage student autonomy and enhance a sense of ownership in the process of collaborative writing [10-11].

Although several articles have reviewed advantages of Web 2.0 technologies in language learning, there is a lack of studies on how students currently use these sites for collaborative learning purposes. There is also a lack of studies on the instructional and technical usability of these tools and how language learners could use these tools to enhance their own language learning abilities.

However, Chinnery [12] and Thorne & Reinhardt [13] mentioned that other authors haven't presented strong evidence of pedagogical attributes and applications of Web 2.0 tools in classrooms. Lomicka and Lord [8] also supported the above statement that studies investigating second language acquisition through the use of Web 2.0 tools are still at its infancy stage, and these studies are lacking in terms of both theoretical and empirical perspectives.

Despite the increasing interest and the potential benefits of Web 2.0 for facilitating knowledge creation, sharing and collaboration among many users, little is known on the extent of usage of Web 2.0 technologies in Thailand. This study assessed the Web 2.0 technologies; investigated the effectiveness of web 2.0 technologies and assessed students' perception of Web 2.0 tools in language learning.

Literature Review

A. Web 2.0 technologies

A concept of Web 2.0 tools has been defined and described by Cormode & Krishnamurthy [14] as the second generation of the World Wide Web. Web 2.0 is a site which allows users to post and share multimedia contents in several forms such as texts, graphics, video files, and photos with comments within communities of practice. Features of Web 2.0 that differ from Web 1.0 are that the content creators were few in Web 1.0 because the participants act as consumers of content, but any

users can be a content creator in Web 2.0 [14-15]. Web 2.0 is not a static page because people can share contents, participate, collaborate and interact with each other. These technologies offer many tools for users such as Facebook, Wikis, and Blogs. These tools facilitate instant messaging; chat and conversational arenas; online games and virtual worlds; social networking; and blogging and enhancing new generation of the web-based collaborative-authoring [16-18].

Even though there have been several disagreements over the possible advantages and disadvantages of Web 2.0 technology, there is also a growing interest in how and whether Web 2.0 tools could be employed for educational purposes. An aspect of Web 2.0, which has yet to be sufficiently researched and consequently the focus of this paper, is the use of online social networks for foreign language learning purposes. The ability of individual users to collaborate, create, and share content with other users may benefit learning languages [8]. Social networks have generally been used informally for non-educational social interaction purposes.

To conclude, Web 2.0 technologies have the potential for language teaching and learning. They are appropriate for electronic research, knowledge creation, storage, sharing and usage as these tools offer a learning platform for knowledge sharing, electronic learning, including facilitating virtual collaborations [19]. However, usage of Web 2.0 technologies needs skills and internet connectivity.

B. Collaborative Writing and Technology

Ede and Lunsford [20] described collaborative writing as the joint construction of a text by two or more authors in which interactions and shared decision-making occur in all steps of the writing process, and all writers share the ownership of the texts produced. Literature has shown many advantages of collaborative writing. Collaborative writing was found to help students with certain resources not accessible when compared

to solitary writing activities [21]. Swain [22] explained that collaborative writing helps students to negotiate language use and collaborate in the solution of language problems in the process of co-authoring including paying attention to discourse structures, grammar, and vocabulary usage.

Collaborative writing has been increasingly employed in L2 classrooms in recent years. This is especially true for the use of collaborative writing tasks in online L2 writing contexts. According to Li [23] online collaborative writing will increase in the future because of the recent developments in computer-mediated communication (CMC) technology. Technologies that have been found to enhance collaboration are wikis, blogs, and chats [3]. They offer many options such as writing from anywhere at any time and viewing or going back to previous versions of texts as well as the use of an older text. Teachers can use these tools to track students' collaborative processes. These tool options are useful because different tools facilitate different kinds of collaboration (Elola & Oskoz, 2010 as cited in [24]).

According to Ghosh [25] the characteristics of face-to-face and online collaborative writing environments differ in a few significant ways, and these differences can have an impact on how learners engage with both the writing task and each other as they work to create a written product. In addition, different modalities may be chosen by instructors for different purposes. For example, face-to-face activities can be suitable classroom exercises for raising learners' awareness of form while also requiring them to attend to meaning. They also give learners an authentic reason to interact with each other verbally. Online collaboration may be more appropriate for learners who live far away from each other and who may find it difficult to meet outside of class or who are doing an online course [4].

Purposes of the study

The purposes of this study are: (1) to investigate the effectiveness

of web 2.0 technologies in terms of students' English writing competency as compared to students with no web 2.0 technologies-applied classes, and (2) to examine the extent to which web 2.0-based classes differ from non-web 2.0 classes regarding students' attitudes towards writing class, writing skill improvement and cooperative learning.

Research Methodology

Introduction

An instructional design model in this study integrated: (a) constructivist learning theory; (b) a pedagogical framework for online learning environments; and (c) a wiki and Second Life virtual world as the Web 2.0 technologies used in this study. The underlying theoretical framework in the instructional design of this study was the guiding principles associated with constructivist learning theory. In this approach, the learner constructs knowledge and plays an active role in the learning process. This means that learning is a social endeavor, which integrates many aspects via dialog, knowledge sharing, collaboration and social negotiation. Based on the constructivist theory, the authentic learning takes place when the learner is actively engaged in the learning process with opportunities to reflect and synthesize information rather than to simply reproduce it [26].

The pedagogical framework employed in the design of this study were taken from some of the principles outlined in the Seven Principles for Good Practice in Undergraduate Education a set of good teaching practices based on the teaching and learning research of Chickering & Gamson, 1991 as cited in [27]. The principles used in the study framework were: (a) Cooperation Among Students; (b) Active Learning; (c) Prompt Feedback; (d) Communicate High Expectations; and (e) Respects Diverse Talents and Ways of Learning (Chickering & Gamson, 1991 as cited in [27]).

Second Life. Second Life is an online, three-dimensional virtual environment developed by Linden Lab® where the users can design and

construct their own virtual world. Second Life users represented in the virtual world are called avatars that have the ability to interact and communicate with one another in real-time [28]. Avatar appearance can be customized and each avatar has the capability of walking, running, flying, chatting and performing other animated functions as well as send instant messages and notes while in the virtual world. The instant messaging function also supports an email communication to users outside of the Second Life environment while maintaining resident anonymity, as users cannot identify avatars to the real-life identity of the Second Life user. All Second Life users have access to three-dimensional modeling tools that allow residents to move, edit and create virtual objects or simulations such as houses, waterfalls, musical instruments, space ships and butterflies. Users are able to download sound, images and stream in video into Second Life. Actions or animations that control avatar or object behavior such as running water is created by a programming language called Linden Scripting Language (LSL) developed by Linden Lab®.

Besides using Second Life to work collaboratively on the writing assignment, a wiki was established for information and for knowledge sharing between student-participants and as a platform to share writing resource information such as reference articles, book titles, informational websites, images, etc.

Wiki – Wetpaint.™ Wikis are collaborative online workspaces where many users can collaborate and edit a shared project, document or exchange information and resources. Wetpaint offers free wiki websites that are easy to begin and can easily add text, photos, links, and other content to the wiki website. To add or edit content, users click the EasyEdit button to activate an editing toolbar similar to programs like Microsoft Word™. The creator of the Wetpaint wiki can customize it for content and design and can limit user access only to those individuals that have been "invited" to contribute to the wiki and Wetpaint wikis can be read regardless of the web browser. The wiki used in this study was developed as

a collaborative workspace for students, and only individuals who were invited had access to wiki content.

Participants

This study was conducted at Thaksin University in Songkhla. The participating students were two classes of undergraduate students taking General English II course. There were a total of 60 students.

Design of the Study

This was a quasi-experimental research study in which purposeful sampling was used on intact classes as experimental and control groups. A General English class was randomly selected to be the experimental group, or Web 2.0 class. The other class was the control group, or non-Web 2.0 class, and was taught by conventional face-to-face instruction. All the students in both experimental and control groups were required to take pre- and post-tests. The entire treatment lasted for twelve weeks. A post-project questionnaire regarding students' attitude towards writing in English was administered to both groups at the end of the study. A questionnaire regarding students' attitude towards Web 2.0 technology use was administered to the experimental group only at the end of the study. Interviews were conducted at the end of the study. Quantitative data consisted of test scores and responses from the questionnaires. Qualitative data was collected from the post-project questionnaire and the interviews.

Writing Competency Test

The procedure for constructing the pre and post writing competency tests is as follows:

1. A table of content analysis (learning unit objectives) was constructed in order to identify the numbers of items and how to measure the test content and the objectives.

2. The result of the analysis in step 1 was used to construct the 40 items of objective test: the true-false, matching, and 4 items of subjective test.

3. Three English language specialists were consulted to check the content and validity of the test. The feedback was used for improving the test before administering it to students. The content of the test was evaluated through Index of Item-Objective Congruence (IOC). In this study, the value of IOC is between 0.6-1.0, which was acceptable.

4. The revised test was tried out with 30 second-year students who have studied English paragraph writing in order to check the level of difficulty of test items and the discrimination index. These students were a different group from those in the sample group.

5. Twenty-nine test items with value of level of difficulty between .20 to .80 and the discrimination index higher than .20 were selected. The items were also selected based on the defined learning objectives of four units. The test was then tried out with students who were in a different group from those in step 4. The test scores were calculated to check for reliability using the Kuder-Richardson Formula 20 (KR_{20}). The value of this reliability was 0.84.

6. Twenty-nine test items from item 5 were then employed in the study. The pre-test and post-test consisted of identical questions.

Questionnaire

The procedure for constructing the questionnaire is as follows:

1. Some related literature on attitude and methods in developing a questionnaire was reviewed to develop the initial questionnaire. 21 questions were formulated. The 21 questions covered in the questionnaire asking students' attitude towards English learning included (a) eight questions about attitude towards class; (b) six questions regarding perception of writing skill improvement; (c) six questions related to students' attitude towards cooperative learning; and (d) one open-ended question asking for their opinions and comments about the instruction.

2. Three language specialists were consulted to check the congruence between the questionnaire items and 3 objectives: students' attitude towards class, perception of writing skill improvement and attitude towards cooperative learning. The value of IOC was between 0.6-1.0. The students must rate the statements on a five-point Likert scale from "very low" to "very high". The initial questionnaire was then tested with students who are in a different group from the sample group. The results were used to improve the test by making it more comprehensive, reliable and valid for collecting data.

3. The questionnaire was then administered to the experimental group of students. The Cronbach's Alpha value of this questionnaire was 0.85, exceeding the acceptable standard of reliability analysis of 0.6 as recommended by [32]. It could be inferred that the questionnaire was acceptable to be employed in this study.

Data Collection

The aim of this study was for students to work collaboratively on five writing assignments within Second Life. Besides using Second Life as a part of the study, students used a wiki for writing information and to share and exchange their resources while they were working collaboratively on the assignments. The five collaborative teams, each composed of six team members involved in meeting for ten sessions. Each session composed of 4 to 6 hours. Data collection was completed in four main phases: (a) Pre-project preparation; (b) Implementation of the writing project (c) Review and scoring of the post-project questionnaire and the writing competency test; and (d) Analysis of interview results.

Data Analysis

The data obtained from the testing of the different methods of learning were analyzed and interpreted in two main ways, by quantitative

and qualitative analysis. Quantitative data includes the data obtained from the post-test and the questionnaire. T-test was used to compare the writing competency of the experimental and control groups. Descriptive analysis was performed on the data collected by the questionnaire. An independent t-test was employed to answer the second research question. A questionnaire regarding students' attitude towards writing learning was administered to the students at the end of the tenth week of study. The questionnaire included (1) attitudes towards class; (2) students' attitudes towards writing skill improvement and (3) attitudes towards cooperative learning. Qualitative data includes the data obtained from the open-ended section of the questionnaire. The data obtained from the interview was labeled and coded so that the differences and similarities between all the answers were seen.

Results

Research question 1

Pre-testing and post-testing were employed to evaluate students' English writing competency in order to measure their learning achievement by comparing their writing competency before and after the experiment. Table 1 presents the results of the students' English writing learning achievement of both groups.

Table 1 Result of Writing Competency Tests for Control Group and Experimental Group

Group	Test	$\overline{X}$	SD
Control group	Pre-test	39.37	3.28
	Post-test	46.73	4.76
Experimental group	Pre-test	38.87	4.57
	Post-test	53.07	8.74

N = 30

Based on table 1, students in the control group who were taught by conventional face-to-face instruction had a pre-test average score of 39.37 while their post-test score was 46.73. For the experimental group who studied via web 2.0 technologies, students had a pre-test average score of 38.87. The post-test average score of this group was 53.07. The results showed that both control and experimental groups had higher mean scores after learning English writing. To compare the English writing competency of both groups, an independent-samples t-test is used to determine whether the mean difference between the post-tests of both groups is statistically significant. The findings are shown in the table 2 below.

Table 2 Result of Comparison between Control Group and Experimental Group

Group	n	$\overline{X}$	SD	t	Sig. (2-tailed)
Control group	30	46.73	4.763	-3.48	.000
Experimental group	30	53.07	8.741		

P < .05

Table 2 above showed the comparative result of the writing competency test between students studied and worked collaboratively via web 2.0 technologies and those who studied with the conventional face-to-face instruction.

The average mean scores of the control group and the experimental group are 46.73 and 53.07 respectively. The standard deviation of the control group and the experimental group are 4.76 and 8.74 respectively. According to the result of the t-test which was -3.48, it can be concluded that the learning achievement of the experimental group is higher than the control group at a significance level of 0.00. This corresponded to the first question of this study.

Research question 2

A. Students' Attitudes towards Class

A total score from questions 1-8 was used to determine students' attitudes towards the writing class. There was a statistically significant difference in attitude towards class between the experimental and the control groups (t = -12.59, df = 58, p<.01). On average, the total score for the experimental group was 32.70 (SD = 2.18). The total score for the control group was 25.23 (SD = 2.40). Results are shown in Tables 3 and 4.

Table 3 Students' Attitudes towards Writing Learning

Condition	Experimental Group		Control Group	
	Mean	SD	Mean	SD
Attitudes towards class	32.70	2.18	25.23	2.40
Attitudes towards writing skill improvement	29.90	2.99	24.67	4.38
Attitudes towards cooperative learning	28.67	4.46	24.07	3.39

Table 4 Results of Independent-Samples T-Tests for Attitudes towards Class

| Content | t | df | Sig. (2-tailed) | t-test for Equality of Means | | 95% Confidence Interval of the Difference | |
				Mean Difference	Std. Error Difference	Lower	Upper
Attitudes towards class	-12.597	58	.000	-7.467	.593	-8.653	-6.280

B. Attitudes towards Students' Improvement in Writing Skill

A total score from questions 9 to 14 was used to determine students' attitudes towards their improvement in writing skill. There was a statistically significant difference in students' attitudes towards their improvement in writing skill between the experimental and control group (t=-5.03, df =58, p<.01). On average, the total score for the experimental group was 29.90 (SD = 2.99). The total score for the control group was 24.67 (SD = 4.38). Results are shown in Tables 3 and 5.

Table 5 Results of Independent-Samples T-Tests for Attitudes towards Students' Improvement in Writing Skill

| Content | t | df | Sig. (2-tailed) | t-test for Equality of Means | | 95% Confidence Interval of the Difference | |
				Mean Difference	Std. Error Difference	Lower	Upper
Attitudes towards students' improvement in writing skill	-5.036	58	.000	-5.233	1.039	-7.313	-3.153

C. *Attitudes towards Cooperative Learning*

A total score from questions 15 to 20 was used to determine students' attitude toward cooperative learning. There was a statistically significant difference in students' attitudes towards cooperative learning between the experimental and control group (t = -4.49, df = 58, p<.05). On average, the total score for experimental group was 28.67 (SD = 4.46). The total score for control group was 24.07 (SD = 3.39). Results are shown in Table 6.

Table 6 Results of Independent-Samples T-Tests for Attitudes towards Cooperative Learning

Content	t-test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Attitudes towards cooperative learning	-4.492	58	.000	-4.60	1.024	-6.650	-2.550

Post-project Questionnaire and Interviews

A. Effectiveness of web 2.0 technologies

The post-project questionnaire and the interview collected additional data regarding attitudes towards the effectiveness of the Web 2.0 technologies.

Overall, the main obstacles identified by students about Second Life were the technical issues experienced during implementation of the study. The common problems were software download and firewall issues. The majority of students reported that more time was needed to adjust themselves with virtual environment and to better

understand several tools and applications used in Second Life. However, the results show that students have found the experience mostly positive. They stated that they had fun creating their virtual avatars, building and purchasing virtual items.

More training session and practices were recommended for them to get familiar with the Second Life learning environment. The speed of network was another problem of using Second Life. Most students used Second life at home because the internet speed was too slow at the university computer center. Students expressed that they used instant message software after the class for reminding and discussion purposes. Synchronous discussion in Second Life was recommended to increase interaction. Working in a group assignment, students felt that some students were free-loaders and their score may be affected by them.

For wiki, it was viewed as a relatively easy platform for students to learn compared to Second Life. It was reported most favorably by most students. Overall, students enjoyed the convenience and simplicity of wikis during implementation of the study. They perceived that they were able to edit as many times because they were able to write directly in wikis without sending files to other group members. Students with basic computer skills were able to use wikis. Since the wiki was available to all students, they were provided opportunities to learn from others' written work and the positive competition enhanced them to increase the quality of their written work. Students expressed that wikis helped to make easier the managing of their collaborative group work and promoted a comfortable environment for them to communicate. In terms of their attitude toward modifying others' written work, students comfortably expressed their ideas in discussions as well as revised others' writing assignment. Finally, students felt that their writing ability had been improved and their vocabularies increased.

Besides, most students expressed positively their ability to work collaboratively online without having to meet face-to-face, to add and

update writing content, to see and edit what others in the group members had contributed, and to associate version control. The wiki space helped students evaluate the quality of the contributions being made on their page, which could be emphasized easily on the writing assignment. In addition, it was reported that the comfortable access to the Wikis from anywhere and the ability to customize the interface were other positive aspects.

The main problems were that students expressed frustration with the wiki interface when they first used wikis because many of the students had little or no prior experience of using wikis and the interface was in English. Another obstacle was technical issues in terms of simultaneous saving of edits, and the inability of the wiki to function as a word-processor. Some students complained about wiki's saving procedures and some had accidentally deleted the writing work done. The disappointed students were frustrated with this problem. Even though they were informed that a wiki was not a word processor, some of them were still disappointed at not being able to use it as such.

Discussions

Students expressed more positive than negative opinions as they thought that web 2.0 technologies offered them effective tools for completing their group work. However, the efficiency gains did not increase equally for all students or student groups. Most students reported positively on the use of web 2.0 features as described in the results of post-project questionnaire and interview. They agreed with the ease of setup and version control. These features meant the writing assignment could be done easily. Based on the interview, the document construction process in wiki was viewed as useful to complete the writing task. The students' collaboration for writing assignment from a distance worked positively for most students. The students who had their work accidently erased or overwritten by group members were less enthusiastic.

To conclude, Web 2.0 technologies have been promoted as a new technology that fosters collaborative learning. However, in spite of their advantages, students may be frustrated or disappointed, as web 2.0 technologies do not fully serve their needs or expectations. Both technical and teaching obstacles may hinder the progress of collaborative learning and writing. Even though web 2.0 technologies are regarded as low cost, effective and user-friendly, technical problems may occur from various reasons such as unstable server, lack of features and extensions, downloading of files, concurrent editing etc.

The students' attitudes towards collaborative writing taken from the analysis of the students' discussion logs, showed that collaboration and discussion among students did not quite high and that web 2.0 technologies were not automatically enhance collaboration. The results are supported by the data log, which shows that the students had low collaboration when they used web 2.0 technologies to handle the writing assignment in this study. This might be for the lack of collaborative skills and familiarity with web 2.0 technologies as the students had never used web 2.0 technologies before. As a result, the students tended to postpone the submission of writing assignment work when the deadline was reached. According to Cole [29], it is not sufficient to employ this technology in teaching without a change of the underlying teaching and learning paradigm, and expect students to automatically become collaborate with others when using the unfamiliar technology in learning. This means that course content and teaching methodology need to be redesigned to realize the potential capabilities of web 2.0 technologies in education. The results show that the benefits of collaborative learning cannot be achieved if the limitations of web 2.0 technologies are not fully realized. Thus, the role of the teacher is very important in terms of guiding the students and providing appropriate feedback to perform their tasks.

In addition, most students agreed that the combination of both Second Life and wikis makes the effective tools for communication and

dialogue, because the need to engage in some form of both asynchronous and synchronous communication is highly valued by the students. This is in line with Weber [30], who asserted that it seems that the blended model of communication is the most proper form of discussion among students, as the combination of both asynchronous and synchronous is more stimulating for the learning process than using only one form of either. The blended model includes both synchronous and asynchronous communication. Synchronous communication occurs in real time and can occur face-to-face, whereas asynchronous communication is not immediately received or responded to by those involved such as emails and message board forums that help people to communicate on different schedules. Thus, both forms of communication and collaborative technologies are potentially valuable for students to work collaboratively a writing assignment.

Moreover, students need to understand the role of motivation, as it is an important element of collaborative learning. Motivation can be achieved in several ways. First of all, the motivational value of web 2.0 technologies must be seen in connection with the web 2.0 technologies topic itself, whether it is interesting and related to the students. Undoubtedly, the data log demonstrates that motivated students edited more content and employed more web 2.0 functions than other students. Other factors that may result in low motivation include lack of collaborative skills, technical problems with web 2.0 technologies, lack of clear learning evaluation procedures, etc.

In addition, teaching usability problems are considered as one of the main factors that affects collaborative learning, such as the integration of web 2.0 technologies into teaching and learning processes, students' prior knowledge and experiences with web 2.0 technologies, etc. Several lessons can be drawn from the findings for an appropriate use of web 2.0 technologies as collaborative learning tools for education.

Potential Challenges

There are many challenges of using Web 2.0 technologies in language learning as identified in this study. Firstly, technical issues have prevented some students from employing them in language learning and teaching. For an instance, slow loading time of Second life, slow connection speed, and students' internet connectivity that temporarily fails have obstructed students' full use. As a result, more care needs to be taken regarding integrating social networking tools into formal learning. This is because some teachers and students may not understand the educational use of such tools and therefore object to their usage [31].

Obstacles faced by educational settings in effective implementation of social networking sites were revealed to be similar in many studies (e.g. Gebhard, 2012, McBride, 2009 as cited in [32]). For example, local elementary school study, a poor internet connection at school which makes an access to Second Life or wiki more difficult. This is because RSS of a more sophisticated Web 2.0 technology needs teachers to have a high level of knowledge and understanding of the Web, which makes implementation at the educational settings more difficult (Román-Mendoza, 2009 as cited in [33]).

Pedagogical Implications

As students have different views on to which extent Web 2.0 tools should be adopted in language teaching classrooms due to their different understanding and levels of familiarity with technology, students' internet literacy differs highly. Therefore, there is no best single idea that serves all students' needs as far as the integration of Web 2.0 is concerned. Thus, an instructor should have different levels of integration of the technology to serve students' degree of interests and levels of computer literacy. According to Rosell-Aguilar [34], teachers ought not to consider that all learners are familiar with the new technology or can automatically adjust themselves into the technology learning environment.

The most important teaching implication is for the teacher to facilitate and provide guided elements of Web 2.0 tools in the supported environments. Several studies showed that the integration of Web 2.0 tools does not ensure learner autonomy in the learning (e.g. Hourigan & Murray, 2010 as cited in [32]). This means that instructors should provide clear guidance and provide proper feedback and encouragement in order to support and ensure the positive learning outcomes of the integration of Web 2.0 technologies.

According to Arnold, Ducate & Kost [35], in order to encourage students' collaboration and promote their equal contribution, teachers ought to consider splitting a large class into more defined and precise learning subgroups. Moreover, Thomas [36] stated that teacher training should be conducted and a social constructivist approach should be in place in order to prepare for the adequate and effective use of Web 2.0 tools. Teachers should be aware that the teaching approaches do not come along with the tools naturally, even though these technologies have demonstrated significant potentials for language learning.

In addition, one of the main challenges for teachers is to ensure that each student is individually responsible for doing his or her equal share of the group's written work as well as to guarantee that students can equally edit their writing tasks in a collaborative writing effort. This is because unmotivated students may claim that they have indirect experience through observing other students' participation even though they are not engaged in genuine collaborative activity with other students. This is supported by Arnold, Ducate & Kost [35] and Lee [9] who mentioned that to motivate those learners and ensure an equal amount of participation for all learners of different language proficiency levels remains a great concern for language teachers. They further explained that this lack of contribution may be due to different reasons, and one of them is different levels of concerns for and understanding of authorship.

Recommendations for Future Research

The findings revealed that both technical and teaching issues need to be addressed in order to enhance Web 2.0 technologies as collaborative learning tools. In addition, there is a need for a pedagogical approach in terms of technical usability in order to provide students with an effective collaborative leaning model for education. Future study should pay attention to the refinement of the instruments for evaluating students' attitudes towards collaborative writing activities. Besides, future research should be conducted with larger groups of student for a greater degree of reliability and validity.

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