STUDENTS AND TEACHER'S ATTITUDES AND PERCEPTIONS TOWARD COLLABORATIVE WRITING WITH WIKI IN A PRIMARY FOUR CHINESE CLASSROOM

XUANXI LI, SAMUEL KAI WAH CHU, WING WAH KI, MATSUKO WOO

Faculty of Education, The University of Hong Kong

xuanxi6@hku.hk, samchu@hku.hk, hraskww@hkucc.hku.hk, matsuko@hku.hk

Abstract

This case study investigated the attitudes and perceptions of primary school students and their teacher toward collaborative writing using a wiki technology in a Chinese writing class in China. An online collaborative writing environment named "Joyous Writing Club" (JWC) was designed and developed using a wiki. Participants included 59 primary four students and their Chinese language teacher. The study adopted a mixed-methods design, using quantitative and qualitative data.

A writing attitude test was administered to the students using a pretest-posttest design, and JWC was used by the participants for a period of two months. After that, a questionnaire using responses on a 5-point Likert scale was administered to examine the students' perceptions on the use of the wiki-based collaborative writing environment. A questionnaire consisting of open-ended queries was also administered to the teacher to gain her insights on using JWC with her students.

The results indicated that students showed improvement in writing attitudes after engaging in collaborative writing with wiki. Students' responses to the questionnaire revealed that they perceived the collaborative writing using a wiki as beneficial in facilitating motivation to write, heightened group interactions, and widening the reading audience of their writings. Students' positive perceptions on the use of JWC were also found to associate positively with students' writing attitudes in the posttest. The strongest positive correlation was found between perceptions on motivation to write and writing attitudes. The teacher reported that students expressed higher interest in writing on JWC compared relative to writing on paper. She also indicated that factors such as the topic of the Chinese composition and students' computer skills may affect the quality of collaborative writing with wiki.

This study provides information that may help teachers and researchers to understand students' responses towards collaborative writing with a wiki environment in a Chinese writing class, and the factors that may facilitate the effective use of such wiki environment.

1. Introduction

With the rapid development of wiki technologies, wikis are widely applied to encourage authors to participate in collaborative writing in order to bring writers with higher writing ability and positive writing attitudes [1, 2]. In recent years, online collaboration wiki websites such as PBworks.com, Wikispaces.com, Wetpaint.com and Wikia.com are widely used by educators to support English writing [3-6]. For instance, Allison [7] created a wiki workplace from Wikia.com to help high school students improve their collaborative English writing skills five years ago. So far, the project already has participation of a list of member high schools. Woo, Chu, Ho and Li [8]'s study investigated the effect of collaborative English writing with a PBworks wiki among primary five students in Hong Kong. Their study found that students enjoyed using wiki, and the overall perception was that it helped foster teamwork and improved writing.

However, there are few existing wiki projects related to the teaching and learning of writing in Chinese, and limited studies have explored the attitudes and perceptions of teacher and students toward collaborative writing with wiki in primary Chinese writing class [9]. Therefore, this study aims to address the following three research questions: (1) What is the difference of students' writing attitudes before and after writing with wiki? (2) What are the attitudes and perceptions of teacher and students toward collaborative writing with wiki? (3) What is the correlation between students' perceptions on collaborative writing with wiki and their writing attitudes after writing with wiki?

2. Methodology

2.1 Participants

The participants were invited from a primary school in the city of Shenzhen in Mainland China. The school was selected from high to mid band level in terms of the teaching quality of Chinese writing and campus facilities, and the school was equipped with computer equipment. A class of 59 primary four students and their Chinese teacher for this case study were selected. The average age of primary four students is 10. They both assented to participate and turned in signed consent forms from their parents. The informed consent forms also attained from the Chinese teacher and school principle.

2.2 The Joyous Writing Club

For the purpose of this study, a wiki-based collaborative writing environment named "Joyous Writing Club" was designed and developed by the researcher using MediaWiki software based on the model for design and development [10]. The Chinese teacher invited students into the "Joyous Writing Club" (Figure 1), and guided students to be familiar with the writing environment in computer lab in class. She grouped every four students as a team, including two students with higher Chinese writing ability, and two students with lower Chinese writing ability. One leader was selected by the team members. Students of a same group used the adjacent computers, which was convenient for the face to face group discussion.

Every group wrote compositions in their own wiki workplaces. And the guidance for writing process and rating criteria were posted by the teacher in Teacher's Corner on JWC (Figure 1). Students were required to finish every composition within one week, either write in or after class. During this study, students have finished three compositions all together.
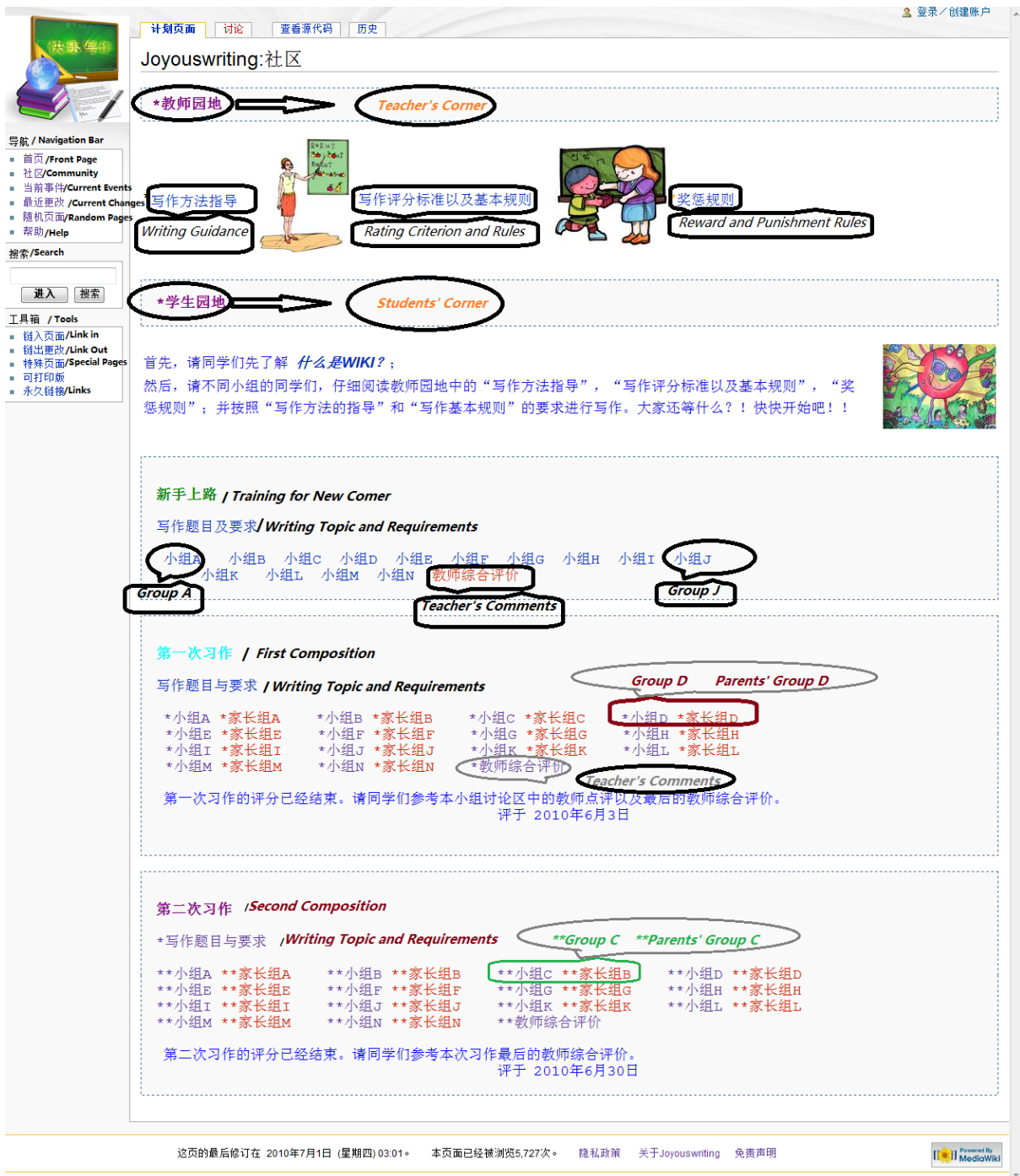
Figure 1. Writing Community of Joyous Writing Club

2.3 Research Design and Instruments

In this case study which lasted for two months, the researcher has used both quantitative and qualitative data collection methods to fulfill the purpose of this study, including questionnaires and interviewing. Triangulation though different methods was addressed by combining questionnaires with interviews, in which more than one method is combined to take advantage of the strengths of each method while overcoming their flaws [11]. Data from three kinds of questionnaires including pre- and post-writing attitude test, course feedback questionnaire, and teacher's questionnaire were collected.

Writing attitude pretest and posttest including 15 items were used to test students' writing attitudes, and they were designed and developed based on the writing attitude questionnaire in Liang [12]'s study.

3

Responses were given in a five point Likert scale format ranging from strongly agree to strongly disagree to examine the participants' perception. A Cronbach alpha of .8732 can indicate that the items are repetitious and reliable. The writing attitudes pretest and posttest scores were analyzed using Paired-Sample T test by Statistical Package for the Social Sciences (SPSS) for windows version 11.5.

A teacher questionnaire was developed based on Woo et al. [8]'s study. All the questions are open-ended questions. All the questions in the questionnaire were checked by two researchers to ensure the validity and reliability of the questionnaire.

A course feedback 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*) was used to explore students' perceptions towards the collaborative Chinese writing with wiki. The questionnaire was developed based on Liang's study [12]. And the questionnaire (21 items) was divided into five subscales which are Motivation (6 items), Interaction (6 items), Teacher's Role (3 items), Audience (2 items) and Technology (4 items). According to Wu [13], a Cronbach alpha (> .6000) can be considered acceptable criterion for reliability. Cronbach alpha reliability value of the overall scale was .8540, which means that the scale is reliable (Wu, 2008). For the subscales, Motivation had an alpha of .8516, Group Interaction alpha was .6640, Teacher's Role had an alpha of .3713, Audience alpha was .8739, and Technology alpha was .3360. Hence, three subscales including Motivation, Group Interaction, and Audience were mainly analyzed using SPSS in this study.

The interviews were semi-structured and designed to elicit reflections about interviewees' experiences that could help to understand specific issues. The researcher interviewed 14 students all together. Three interviews have been conducted which focused on three groups, each lasted for 15-20 minutes. And two individual students were interviewed, each for 10 minutes. Interviews were coded by the researcher into themes, and each theme was given a label, the percentage of students who contributed to the theme was calculated, and representative statements for each were selected. Finally, the coded data were cross-checked by the researcher to ensure the validity and reliability of data interpretation.

3. Results and Discussion

3.1 What is the difference of students' writing attitudes before and after writing with wiki?

The full score of writing attitude five likert scare (15 items) is 75, the higher the attitudes score is, the positive attitudes students will have. As shown in Table 1, among the 59 students, 3 students did not submit their questionnaires, 56 responses had been included at last. The mean score of attitude pretest was 55.57 (median = 45) which means most students had positive attitudes towards writing. But still, a difference was found between 55.57 and 62.77 which is the mean score of attitude posttest.

Table 1

Paired Samples Statistics of Students' Writing Attitudes

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	55.57	56	9.171	1.226
	Posttest	62.77	56	8.795	1.175

According to Table 2, the mean score of posttest was 7.20 higher than the mean score of pretest. The observed probability value was $p = .000$ ($p < .05$), which indicates that the difference between pretest scores and posttest scores was significant.

Table 2

Paired Samples Test of Students' Writing Attitudes

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-7.20	10.071	1.346	-9.89	-4.50	-5.347	55	.000

3.2 What are the perceptions of teacher and students towards collaborative writing on JWC?

The course feedback 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*) tested students' perceptions toward the collaborative writing with wiki, 51 responses were analyzed. The result was shown in Table 3. It can be found that the mean score of every items in the subscales of Motivation, Interaction, and Audience was higher than 3 (neutral), which reveals that students perceived the collaborative writing using a wiki as beneficial in facilitating motivation to write, heightened group interactions, and widening the reading audience of their writings.

Besides, based on the analysis of interviews for students, four positive themes emerged. The first theme labeled Learning Benefits (93% students) reflected that writing on JWC assisted students to improve their writing ability, writing interest, computer skills, and collaborative ability. The second theme was Group Interaction (86% students) suggested that wiki facilitated collaborative learning within a group. The third theme was Technology Advantages (86% students) which captured the benefits and ease of using wiki technology. Students could write anytime in and after class. It was also easier for peer edition and comments. The fourth theme was Audience (71% students), they expressed that more audiences motivated their writing.

Furthermore, based on teachers' responses on teacher's questionnaire, she said there were several other factors which might affect the collaborative writing result, for example, the writing topics and students' computer skills.

Table 3

Students' Perceptions toward the Collaborative Writing with Wiki

Items	Mean	Std. Deviation	Subscale Reliability Coefficient
Subscale 1: Motivation			.8516
1. I like writing collaboratively on "Joyous Writing Club".	4.61	.635	
2. Compared with writing with pen and paper, I prefer writing on "Joyous Writing Club" more.	4.61	.802	
3. "Joyous Writing Club" improved my writing interest	4.49	.857	
4. I participated in writing more because of "Joyous Writing Club".	3.86	1.096	
5. I stayed on writing more because of using "Joyous Writing Club".	4.00	1.077	
6. I hope to continue using "Joyous Writing Club" next semester.	4.73	.695	
Subscale 2: Group Interaction			.6640
7. I learned a lot from my group members, which enriched my writing content.	4.61	.666	
8. On the whole, the conflict among group members brought more benefits than disadvantages.	3.84	1.302	
9. I think the contribution of every member is important. In order to write the best composition, everyone need try his/her best.	4.76	.551	
10. I think if students collaborative successfully in a group or not affect collaborative writing significantly.	4.33	1.071	
11. I think interaction among students can better improve my writing ability compared with the only interaction with teacher.	4.61	.896	
12. Compared with the traditional writing, interaction in "Joyous Writing Club" improved my writing ability.	4.65	.658	
Subscale 3: Teacher's Role			.3713
13. I feel that teacher's guidance is very important in our writing process.	4.63	.747	
14. I feel that teacher's conduction for group writing is very important, for example, how to group students, discuss the topic before writing and so on.	4.47	.809	
15. I think that during our collaborative writing process, the teacher did not provide us with enough help and conduction.	3.57	1.640	
Subscale 4. Audience			.8739
16. Since more people can know our compositions, I become more active in writing.	4.47	.857	
17. I think there are more audiences when we write on "Joyous Writing Club", which is one advantage of this writing environment	4.31	.969	
Subscale 5. Technology			.3360
18. The interface and features of "Joyous Writing Club" were easy to be understood.	4.39	.874	
19. Writing on "Joyous Writing Club" brought us more advantages than disadvantages	3.65	1.508	
20. When writing on "Joyous Writing Club", it was easy for us viewing and editing our compositions.	4.25	.997	
21. The technology characteristics of wiki helped us improved our writing result.	4.67	.739	

Note. N=51

3.3 What is the correlation between students' perceptions on the use of JWC and their writing attitude scores in posttest?

According to Table 4, it can be seen that students' positive perceptions on the use of JWC were also found to associate positively with students' writing attitudes in the posttest. The correlation between students' writing attitudes in posttest were significantly related to motivation ($r = 0.759$, $p = 0.000$), group interaction ($r = 0.563$, $p = 0.000$), teacher's role ($r = 0.386$, $p = 0.005$), audience ($r = 0.647$, $p = 0.000$), wiki technology ($r = 0.501$, $p = 0.000$). All of the coefficients were significant at a $p < 0.05$ level. The strongest positive correlation was found between perceptions on motivation to write and writing attitudes.

Table 4

Correlations between Writing Attitudes and Subscales of Course Feedback Questionnaire

		Motivation	Group Interaction	Teacher's role	Audience	Wiki Technology
Post-test Attitude Scores	Pearson Correlation	.759(**)	.563(**)	.386(**)	.647(**)	.501(**)
	Sig. (2-tailed)	.000	.000	.005	.000	.000
	N	51	51	51	51	51

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

a. Dependent Variable: Posttest Attitude Score

4. Conclusion

The result found that most students became more interested in writing after using collaborative writing approach with wiki. Both students' responses to the course feedback questionnaire and the interviews revealed that they perceived the collaborative writing using a wiki as beneficial in facilitating motivation to write, heightened group interactions, and the potential audiences activated their writing interest. Students' positive perceptions on the use of JWC based on the results of course feedback questionnaires were also found to associate positively with students' writing attitudes in the posttest. The strongest positive correlation was found between perceptions on motivation to write and writing attitudes. Furthermore, the interviews to students shown that they perceived writing on JWC brought them other learning benefits such as improving their writing ability, computer skills, and collaborative ability.

This case study focused on teacher and students' perceptions and attitudes toward collaborative writing on JWC, and the correlation between students' perceptions of writing on wiki and their posttest attitude scores. Further study is still needed to explore the effect of wiki-based collaborative writing approach on students' writing ability, and how do primary students learn to write composition collaboratively using wiki in Chinese writing class.

Reference

[1]   B. Mak and D. Coniam, "Using wikis to enhance and develop writing skills among secondary school students in Hong Kong," *System,* vol. 36, pp. 437-455, 2008.

[2]   S. O. Choy and K. C. Ng, "Implementing wiki software for supplementing online learning," *Australasian Journal of Educational Technology,* vol. 23, pp. 209-226, 2007.

[3]   Wikispaces. (2010. Available: http://www.wikispaces.com/

[4]   PBworks. (2010. Available: http://pbworks.com/content/about

[5]   Wikia. (2010. Available: http://www.wikia.com/Wikia

[6]   Wetpaint. (2010. Available: http://www.wetpaint.com/page/About

[7]   P. Allison. (2009, 20th, May). *High School Online Collaborative Writing.* Available: http://schools.wikia.com/wiki/High_School_Online_Collaborative_Writing

[8]   M. Woo*, et al.*, "Collaborative Writing with a Wiki in a Primary Five English Classroom," presented at the The 6th International Conference on Knowledge Management Hong Kong, 2009.

[9]   T. Xie, "Blog, Wiki, Podcasting and Learning Chinese Language," presented at the The 5th International Conference on New Technologies in Teaching and Learning Chinese, City University of Hong Kong, Hong Kong, 2006.

[10]   S. M. Alessi and S. R. Trollip, "Multimedia for learning: Method and development Massechusetts (3rd edition)" ed. Boston: Allyn & Bacon, 2001.

[11]   N. K. Denzin, Ed., *The research act: a theoretical introduction to sociological methods (3rd ed.).* Englewood Cliffs, N.J.: Prentice Hall, 1989.

[12]   Liang，Shu-ting, "Effects of online peer assessment upon the sixth-graders' learning of writing," Master Master Thesis, Learning and Teaching Institute, National Central University, Taipei, 1995.

[13]   M. L. Wu, "Operation and application of SPSS - Statistical analysis of survey practice," ed Taichung: Wu-Nan Book, 2008, p. 347.