Effects of Technology-Enhanced Collaborative Writing on Students' Learning in Creative Drama Practice

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Abstract

Creative Drama can stimulate imagination and provide enjoyment for students in educational process. In order to inspire students' creativity with drama, this study provides a new experience using collaborative writing technology with different forms of pre-planning writing strategy (mind mapping, storyboard, and narration) in drama class. The experiment is conducted in the middle school. Students create plot by group then elaborate gestures without words to express themselves. The results show learners have positive attitude toward learning. There are positive relationship between satisfaction and online collaborative writing experiences. Furthermore, the application of storyboard as a pre-planning strategy had more influence on plot sketching in writing performance than did the narration. In the future, teachers can adopt online collaborative technology with pre-planning strategy in drama class or other curriculum.

1. Introduction

Drama plays an important role in individual development. The skills developed by students in drama class, such as teamwork, creativity, leadership, and communication, are assets in all areas of life [3]. Creative Drama can stimulate imagination and provide enjoyment for students in educational process [6]. By training students' creative skills with drama, this study provides a new experience to reshape a creative curriculum using collaborative writing technology in drama class.

Drama provides such a good practice for students to take on characters in stories as if they are real to them. The interactive process conducted social creativity [5]. During the planning stage, collaborative activities can propose creative ideas to improve the contents. Students respond to a given situation by planning, organizing information, and solving problems collectively.

In the past, theme developing, plot constructing, and script writing are done by group during the class time. The students discuss ideas together and write them on paper. However, the paper-based writing is hard to edit or correct collaboratively. To put it in another way, the online collaborative technology was recommended. However, the complexity and diversity of collaborative process make the results lacking of focus and logic [2]. The bridge for this gap is to help students understand the drama structure and provide a scaffold in cooperative learning process. For this reason, story outline or graphic map used as forms of pre-writing strategy could benefit the writing performance [11-12]. Thus, this study integrates collaborative writing technology with different forms of pre-planning strategy (mind mapping, storyboard, and narration) in creative drama class.

The research purpose is to investigate the influence of different online collaborative writing tools on student learning in creative drama class. The following questions are at the fundament of this inquiry: 1. Do different online collaborative tools affect student writing achievement? 2. Do different online collaborative tools affect student attitude? 3. Do different online collaborative tools affect student satisfaction?

2. Review of Literature

2.1. Innovation of creative drama teaching

Drama provides students a way to explore emotions, thoughts. The link between Drama education and pedagogical goal is motivating creativity in real world problem solving [1]. The improve turns the situations and stories into a living experience for students [15]. Moreover, Improvisation skills can inspire creativity and bring enjoyment in educational processes [6]. Thus improvisation can be used as an innovative curriculum for creative drama education.

2.2. Benefits of collaborative writing

Cooperation is highly valued in the process of conducting drama education. Participation in dramatic activity help students learn to work together. Teacher can provide a curriculum allow students to create ideas and plots by

teamwork in drama class. The cooperative process includes discussing, negotiating, rehearsing, and performing [2]. Through collaborative writing in drama class, different writers can provide wider knowledge and propose creative ideas to enrich the contents [10].

2.3. Online Collaborative Technology for Writing

Collaborative writing used to be made by pen on paper during the class time. With the rapid development of information and communication technology, the web 2.0 tools provide a new way for collaborative writing. A group of people can use an online workspace to share resources and negotiate ideas [13]. Examples of such workspaces include discussion forums, Google Groups, and other social networking tools like Facebook.

2.4. The writing strategies of collaborative writing

The collaborative writing sometimes does not work as well as expected, because of inadequate management. The instructors can provide writing strategies as planning of writing. The previous findings showed that application of the computerized concept map as a writing strategy had positive effect on the writing performance [11][14]. Similar to concept mapping, mind mapping is one of these strategies that use the forms of visualization to assist users in brainstorming and organizing ideas. Storyboard is a form of graphic organizers for displaying illustrations in sequence of a motion picture, which includes the action, settings, characters, and the sounds [2]. The narration tells the story within screenplay. It assists actors to understand the scene structure and capture every beat of action [2]. The mind mapping, storyboard, and narration can be used as a form of pre-task planning in script writing. Thus online collaborative technology and writing strategies with formats of mind mapping, storyboard, and narrative may have impact on play creating in creative drama class.

3. Methods

The curriculum was conducted in the "Arts and Humanities" subject in a middle school, and the lesson was improvisation with specific type of pantomime. Students need to create plots and movements by team then elaborate gestures, posture, then expressing without words to express themselves.

3.1. Participants

A total of 158 students participated in this study for two weeks. Fifty two students of the group one were guided using the form of mind mapping to create play. Fifty nine students of the group two were guided using the form of storyboard to create play. Forty seven

students of group three were guided using the form of narration to create play.

3.2. Research tools

Three parts of research tools were utilized for this study. The first part was three forms of planning tools used in collaborative writing in this study. The group one used the form of mind mapping to create scripts. The XMind is a mind mapping software developed by XMind Ltd. The Chinese user interface was shown in figure1. Theme and plots should include, but not be limited to. The group two used the form of storyboard to create plan with Google doc's service. This activity allows users to create and edit writing collaboratively online in real-time. Storyboard tells the story by expressing screen, audio, action and situation. The group three used the form of narration to create plan on Facebook. A narration is the general format to express dramatic content.
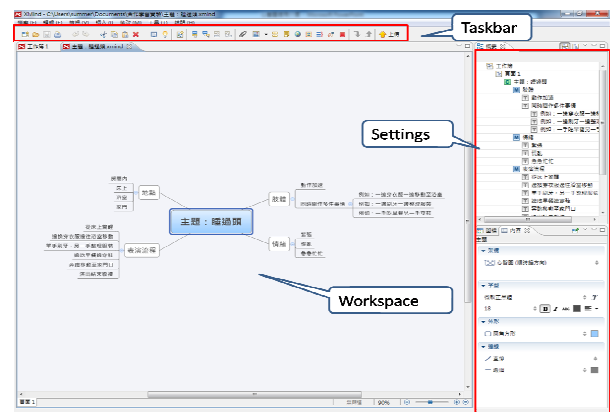

Figure 1、The user interface of XMind mapping

3.3. Writing Evaluation rubrics

The writing evaluation rubrics was used to grade group writing in this study. The rubric was a scoring guide to measure group plan based on theme and plot. As an illustration, the main critiques are "does the plot follow the stimulus story" and "does the main idea is creative and theme is clear". There was a strong correlation between two teachers' evaluation scores (Kendall's ω= .89, p< .01).

3.4. Students learning questionnaire

Two questionnaires were used to evaluate students' learning attitude and satisfaction in this study. The learning attitude scale was to assess students' interest toward this creative drama practices. The questionnaire was modified from the Natural Science attitude scale developed by Hwang and Chang [8]. It is a six point likert scale and the reliability estimated by Cronbach α was 0.91. The learning satisfaction scale was to assess students' satisfaction toward this creative drama practice.

The questionnaire was modified from the learning satisfaction scale developed by Chu, Hwang and Tsai [4]. It consists of seven questions with six point likert scale. The reliability estimated by Cronbach α was 0.96.

3.5. Procedure

The experiment conducted for two weeks. First, students took pre-test learning attitude questionnaire, then use online collaborative tools to create theme and plot by group. Group works were evaluated. Next, individual students mutely elaborate gestures, posture, face expression, and movement according to scenarios. Individual performances were evaluated by two drama teachers. Last, students took post-test learning attitude scale and learning satisfaction scale.

4. Results

The SPSS was used to evaluate effects of collaborative writing technology with different forms of pre-planning strategy (mind mapping, storyboard, and narration) on collaborative writing performance, learning attitude, and satisfaction.

4.1. Analysis of Group Writing

The result of collaborative writings shows that the three groups have no significant difference in theme relevance with $F(2, 27)=1.68$ ($p>.05$). However, the three groups have significant difference in dramatic plot with $F(2, 27)=5.22$ ($p<.05$). The students used the Storyboard ($M = 3.50$, $SD=0.44$) as a form of planning showed significantly better learning performance than those who used Narration ($M = 2.67$, $SD=0.7$) (See Table1).

Previous research indicated that graphical representation, such as Mind mapping, can improve students' writing ability [16]. In this study, the students who use Mind mapping as pre-planning strategy in creative drama class did not show significantly better writing performance than the others. It might be that students have some difficulty in using graphical representation tool [9].

Table 1、The ANOVA results of the writing performance of the three groups

	Group	N	M	SD	F	Pairwise comparisons
Theme	(1)Mind mapping	10	3.60	0.51		
	(2)Storyboard	11	3.18	0.60	1.68	
	(3) Narration	9	3.50	0.50		
Plot	(1) Mind mapping	10	3.10	0.56		
	(2)Story board	11	3.50	0.44	5.22*	(2) > (3)
	(3)Narration	9	2.67	0.70		

$p<.05$

4.2. Learning attitude and Satisfaction toward the creative drama course

In terms of learning attitudes toward the creative drama course, ANCOVA was used to compare the pre-test and post-test of the three groups. The ANCOVA is processed assuming homogeneity of slops. The results shows that the attitude of the three groups are significantly different with $F(2, 154)=9.07$ and $p<.05$. The pairwise comparisons are reported, after controlling the pre-test, the students of Mind mapping group (adjusted *mean* =5.33) has significantly higher attitude than those of storyboard group (adjusted *mean* = 5.05) and narration group (adjusted *mean* = 4.96), implying that developing planning with mind mapping improves learning attitude in creative drama course.

Table 2. ANCOVA results of the learning attitude questionnaire ratings of the three groups

Group	N	Mean	SD	F	Pairwise comparisons
(1)Mind mapping group	52	5.41	.62		
(2)Storyboard group	59	5.13	.69	9.07**	(1) > (2)** (1) > (3)**
(3)Narration group	47	4.79	.82		

$**p<.01$

The result of one-way ANOVA was significantly different on satisfaction toward using different forms of planning strategy, $F(2, 155)=20.29$ and $p<.05$. Furthermore, students in the mind mapping group ($M=5.73$) have higher satisfaction than the other two groups; the storyboard group ($M=5.37$) also has higher satisfaction than the narration group ($M=4.52$) (See as Table 3). In other word, mind mapping approach is students' favorite one, indicating the potential of graphical representation tools.

Table 3. ANOVA results of the satisfaction questionnaire ratings of the three groups

	N	Mean	SD	F	Pairwise comparisons
(1)Mind mapping group	52	5.73	.45		(1) > (2)*
(2) Storyboard group	59	5.37	.90	20.29*	(1) > (3)*
(3) Narration group	47	4.52	1.36		(2) > (3)*

$*p<.05$

5. Conclusion and suggestion

This study provides a creative pedagogical practice and conducts experiments using online collaborative technology for writing in drama class. Students use different forms of planning strategy (mind mapping, storyboard, and narration) for writing. In conclusion, this study uses technology to enhance collaborative learning in drama class and give learners a positive experience through preliminary evidence. The findings and suggestions can be summarized into the following points below:

5.1. The positive relationship between satisfaction and online collaborative writing experiences

Questionnaires were used to evaluate learning attitude and satisfaction of participants. The learning attitude (M=5.00) and satisfaction (M= 5.21) toward online collaborative script writing were above the midpoint on the six point scale, indicating positive attitude and satisfaction. The results also revealed that there was significant difference among different forms of planning strategies for writing (mind mapping, storyboard, and narration) on attitude and satisfaction. The mind mapping group appreciated the learning activities most.

5.2. Adopting proper forms for planning strategy for collaborative writing

The application of storyboard as a planning strategy had more influence on scenes sketching in writing performance than did the narration. The discoveries support the previous literatures that the planning strategy helps users connect ideas and writing performance as well [11][14].

5.3. Recommendation for educators

The creative drama class can motivate students' learning and foster their creative potentials. Teachers not only can provide meaningful learning tasks but also adopt proper forms of planning strategy with online collaborative technology to improve writing performance. The collaborative writing activity can also be used in an unsynchronized environment that enable teacher to take part in and monitor the process of every group.

5.4. For future study

In this study, participants improvise their performance without practice, but Individual performance was not taken into account. Drama performance is related to skill and practice. However research reveals that graphic representation can construct complex approaching to improve understanding and memorizing [7]. The movement and scenes memorizing in individual performance could be compared in the future study.

6. Acknowledgement

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