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Improving Students' Writing Skills through Computer-Based Concept Mapping

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ABSTRACT

The purpose of this study was to find out how the computer-based concept mapping as a teaching strategy could solve the students' problems in learning English writing. The students had low score in writing test and did not actively participate in the teaching and learning process. The research design was a collaborative classroom action research, and there were 30 university students participated. To obtain the data, a writing test and some questionnaires were administered. The test was to evaluate students' writing ability and the questionnaire was to collect students' responses of the teaching and learning process. The findings showed that there were much improvement of their writing skill and learning attitude. The number of students who passed the criteria of success was 27 out of 30 students, and they mostly agreed that concept mapping is a helpful and interesting writing tool

I. Introduction

Many EFL teachers around the world believe that teaching and learning writing is a difficult and demanding skill to acquire. It challenges both teacher and student to have huge efforts to learn it. Nunan(1999: 271) states that writing skills possess an enormous challenge for ESL writers to produce "a coherent, fluent, extended piece of writing in their second language. Therefore, the inexperience writer like language learner has to learn how to recognize, manage and overcome such things as complexities at the level of the clause, grammatical form, and the unfamiliarity of the usage of the language since in writing they do not only learn how to write but also reinforce many aspects in language that they have not fully mastered.

A preliminary study was conducted on fifth-semester students of the English department by a writing test and a class survey. The test required them to write a short essay, and the questionnaire collected their responses to the writing class. The test results indicated that the students' average writing score was 45. This score was below the standard minimum passing level. It indicated that most of the students got D and E for their writing skills. There were 21 out of 30 students who could not pass the standard minimum passing level which is 60. And the class survey showed unsatisfactory responses to the writing class condition. They thought that the class was uninteresting and boring that discouraged their motivation.

Both their low ability and motivation in learning writing should be the main concern for their lectures and the stakeholders. They should give a solution to the problems. For those lecturers who were involved in the teaching process, they had to find appropriate teaching writing techniques that are effective, applicable, and fun. The techniques should help students to organize and generalize their ideas easily, and encourage their confidence in writing. The technique can be integrated with a computer or gadgets to make it more practical and interesting.

Concept mapping is a writing tool that illustrate how the human brain possesses various thought and information that are related to each other (Buzan, 2005). It is a diagram used to visually portray the relationship between ideas, words or other items around a central idea or

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keywords. For writing practice, concept mapping is one of the prewriting strategies that are used as the basis for inquiry, tools for finding what the writer want to say, and manifestation of thinking (Carrol &Wilson, 1993). Concept mapping encourages students to 'map out' their ideas prior to composing, and it allows students to translate ideas and concepts into a visual, graphical representation for writing assignments (Lin, 2005). Its visual design helps the writer to see the relationship of ideas and encourage them to group certain ideas together. As a result, the cohesion and coherence of writing are likely to be achieved effectively.

In addition, this study focuses on the computer-based concept mapping as a practical way to help students construct concept maps more easily. It helps students generate ideas for writing tasks and reorganize their ideas about the topic before receiving further writing instruction (Anderson, Inman & Ditson, 1999; Lin, et al, 2005). Moreover, electronic concept maps are easy to construct and revise. This approach also allows students to customize maps in ways that are not possible using paper and pencil.

Since the computer-based concept mapping proved to be effective as a learning strategy, several studies were conducted to investigate its effectiveness to brainstorm, generate and organize ideas(Anderson, Inman & Ditson, 1999; Al- Jarf, 2009;Lin, et al, 2005; and Dadour&El-Esery, 2014). Finding on those studies are consistent with finding of other research conducted on the use of concept maps as an entertaining and interesting approach (Chang, 2001; Holland et al, 2003) and to solve the teaching problem in writing (Chan, 2004) and indicates that concept mapping as a teaching strategy can improve students' writing ability and attitude.

Based on the explanation above, this research was aimed at examining how the computer-based concept mapping as a teaching technique could improve the students' writing skills and foster their motivation. As a teaching technique, concept mapping is best applied in the writing process, especially in prewriting. Prewriting is the most important part of writing a good text. Many writers struggle with writing a piece of text because they do not know where they should start from, how they find ideas, and organize their ideas well. The concept mapping therefore will assist them to think more concretely about their topic.

II. Research Method

This study was a collaborative classroom action (CAR). Two researchers worked together as teachers and observers. It went through a cycle that consisted of planning, implementing, observing, and reflecting. Before setting the plan, a preliminary study was conducted to find the actual students' problems in learning writing.

After finding the problems, the next step was the planning stage in which the researcher designed the teaching procedure, set the standard criteria of success, selected research instrument, and arranged the research schedule. The planning would be implemented once a week for a month.

The use of concept mapping was applied through the writing process**.** In the prewriting stage, the teacher used concept mapping to help them develop and organize their ideas. After making the map, they draft it into composition. They then asked for help from their friends to give comments and suggestion . after that, they will revise and edit their writing. The last stage, they displayed their writing and its concept map in oral and written expression.

The next step was observing or collecting the data. The data were from the writing test and questionnaires. The students were tested to develop a concept maps and develop it into a report text. After the test was finished, the students answered some questions to the questionnaire. The questionnaire was closed-ended questions.

The data then were analyzed through several stages which were assembling the data, coding the data, comparing the data, and building meaning, and reporting the outcomes. Assembling data covered collecting data, looking for the broad pattern, ideas that seem to answer the

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question. Coding the data involved specifying the data pattern or categories based on the broad picture and identifying the data sources. The data then would be compared to find out the similarity or difference pattern in different sets of data and be visualized into a diagram or tables. The data then would be reflected on the criteria of success to see whether the criteria had been achieved or not.

Table 1. The criteria of success

The criteria of success	Research instrument
Process	questionnaire
Most of the students responded positively to the implementation of the action.	
Student score	Writing test
The students' average writing score is above 60	

III. Research findings

A. The students' writing scores

The result of the test indicated their scores improved significantly and could achieve score above 60 in average. If we compared to their scores in the preliminary study, the achievement was quite significant. The average score in the preliminary study was 55.7, while after the treatment it became 72,1. The number of students who achieved the standard increased. 28 out of 33 students successfully achieved the standard after the treatment, while before the treatment only 9 students achieved it.

Table 2. the inter-rater reliability score between the preliminary study and cycle 1.

Elements of Writing	Stage		The average difference after the treatment
	Preliminary Study	Cycle 1	
	Mean	Mean	
Content	11,8	17,2	5,4
Organization	13,5	20,4	6,9
Vocabulary	12,2	14,3	2,1
Grammar	11,9	13,3	1,4
Mechanics	6,3	6,4	0,1
Students' average Score	55,7	72,1	16,4

The findings show that computer-based concept mapping as a teaching technique could improve the students writing skill in writing report text and encourage them to be more confident and enjoyable. Whiteley (2005: 7) states the concept mapping can make learner understand better of a complex structure, more creative, improve their skill in learning. Buzan and Buzan (1994:220) as the founders of iMindmap, they argue the association or relationship on the map can trigger new information or ideas because it can trigger their prior knowledge of the topic. The result of writing test showed that the highest improvement of aspects of writing were content and organization.

B. The students' responses to the implementation of computer-based mind mapping in teaching writing.

The thirty students of English department gave their answer to class survey to find out their responses to the use of computer-based concept mapping used by the teachers. Their response covered how the map helped them developing, organizing ideas and vocabulary, and also how

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it could make them more confident and enjoyable during the learning process. The quality of their answers to the questionnaire used scales that strongly agree, agree, neutral, disagree, and strongly disagree. The summary of the data from the questionnaire was presented in Figure 1.

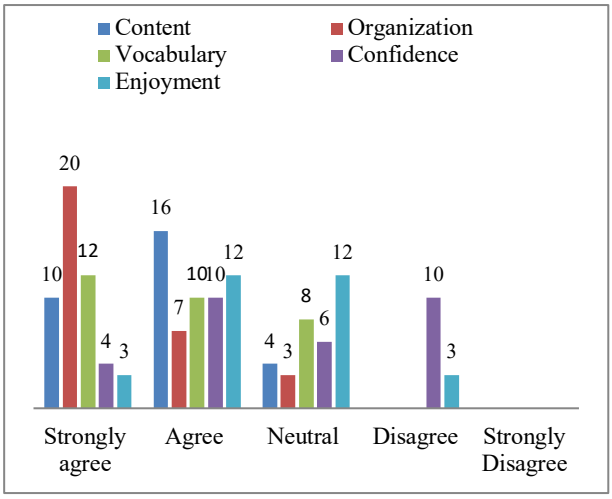

Figure 1: Students' responses to the implementation of computer-based concept mapping

Students' answers to the questionnaire implied the teaching strategy could be a very helpful writing tool for developing and organizing their ideas in the prewriting stage. Using the tool challenged them to elicit more vocabulary or ideas about their topic. Their confidence did not improve much if we compared it to the latter even though the data achieved the criteria of success. In other words, mind mapping could be an effective writing tool and encourage the students to be more motivated in learning English writing.

As a teaching technique, mind mapping is best applied in the writing process, especially in prewriting which is the most important part of writing a good text. Many writers struggle with writing a piece of text because they do not know where they should start from, how they find ideas, and organize their ideas well. The mind mapping therefore will assist them to think more concretely about their topic.

IV. Conclusion

As the conclusion, there two points could be drawn from the results of the study. First, computer-based concept mapping as a teaching strategy can improve the students' writing skill and encourage them to be more confident and enjoyable in writing. There were 28 out 30 students who could pass 60 points as the standard minimum passing level. The average score of their writing was 72.1. They also agreed that concept mapping helped them easily to develop and organize ideas. Second, the teaching technique was best applied in the writing process, especially the prewriting stage. It helped them easily develop their writing into a draft, followed by doing some revision and editing with their peers. Last, they would publish it. This implied that writing activity needs a process and it cannot be done instantly.

This research can be a reference for teachers who have the same problem in teaching writing. They can find the solution of how to improve their students writing skill. This researcher is also very helpful for further researchers who are interested in researching the application of technology in teaching and learning. The researcher hopes that the computer-based concept mapping can be applied in speaking skills for further research.

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