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Using Concept Maps to Enhance EFL Students' Collaborative Writing: Paper-based and computer-mediated approaches

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Abstract: This study investigates the effectiveness of concept mapping (CM) at the pre-writing stage by using it in collaborative writing, and by comparing paper-based and computer-mediated modalities. The research questions address(1) students' perceptions of concept maps in both paper-based and computer-mediated modalities, and (2) the extent to which CM facilitates students' writing in a collaborative writing setting ACCORDING TO WHAT STANDARDS?. The participants were eighteen non-English majors enrolled in a writing class in a university in central Taiwan, and were divided into six collaborative writing groups. The individual interview method was used to elucidate students' perceptions of paper-based and computer-mediated based CM in collaborative writing. Student writing samples from before and after the experimental treatment were collected compared to ascertain impact. Students satisfaction with and perceptions of the two modalities of CM writing were mixed. The paper-based modality was deemed more convenient from drawing maps, and seemed to be more conducive to generating more ideas. The computer-mediated modality was more convenient in that it could be used at any time and any place, and through the Internet, students could invite more people to help with generate ideas. It was implied that the primary benefit of the computer-mediated modality was its accessibility to the internet. The implications of this study are (1) CM is an effective tool for collaborative writing, and (2) writing teachers can adapt either the paper-based or the computer-based modality of CM to best meet their students' convenience.

Keywords: Concept maps, collaborative writing, computer-mediated writing

1. Introduction

Writing is probably the most difficult skill to master when learning a language. Learners have to learn tremendous amounts of vocabulary to precisely express their thoughts and knowledge; grammar in order to communicate understandably; and rhetorical conventions of the target language before they can transform their thoughts into organized writing. During the process of organization, visualizing abstract concepts enables students to make the connection between their cognitive processes, and the content of a piece of writing the relation between contents and the cognition process. Cognitive visualization techniques in effect make thoughts visible and can facilitate the development of writing skills (Jacobson, 2004).This study is designed to guide students in making their thoughts visible with the aim of improving their writing ability.

One cognitive visualization technique is concept mapping (CM). CM represents one's understanding of the topic by mapping concepts and their relationships. CM typically involves three stages: (a) idea generation, (b) idea sorting and organization, and (c) representation of ideas on a map. Concept maps can help learners to generate more ideas about writing, especially at the pre-writing stage. The process of concept mapping can help learners to arrange, rearrange and see the relationship between the main concept and the details (Liu, 2010). In collaborative concept maps, all the group members have the opportunity to develop their social communicative skills and stimulate their motivation for writing through discussion (Guveng & Acikgoz, 2007). They can organize and negotiate ideas and existing knowledge to create new information in a way that is not observed in and apply in their group concept maps work, which is not observed in individual work (Kinchin & Hay, 2005). This study investigates the effectiveness of CM for brainstorming by using it in collaborative writing and by comparing paper-based and computer-mediated CM. The research questions to be addressed are as follows:

1) What are students' perceptions of using concept maps as a brainstorming activity in collaborative writing in the paper-based and computer-mediated modalities?
2) To what extend does CM facilitate students' writing in a collaborative writing setting?

2. Methodology

Participants were eighteen non-English majors enrolled in a writing class in a university in central Taiwan. Almost all the participants had no experience in using either concept maps or in online collaborative writing. The participants were divided into six groups; each group had three team members.

After accomplishing both paper-based and computer-mediated writing tasks, the participants were interviewed to examine their perceptions about using CM in general, the relative benefits of paper-based versus computer-mediated CM, and the usefulness of using CM for writing in the two modalities. The individual interview method was used to elucidate students' perceptions on these topics. Student writing samples from before and after the experimental treatment were collected compared to ascertain impact.

3. Results

Results from the interviews show that students' feelings about using concept maps are generally positive. Students said they benefitted from and enjoyed the lessons. They commented on the advantages of using group concept maps as a brainstorming activity to help them organize their ideas, and further to clarify their writing structure, content, and discourse. For collaborative writing, CM in both modalities provided members with a means to visualize the group discussion and organize the ideas generated as shown in Figure 1. Student opinions on \ paper-based versus computer-mediated CM writing were mixed. The paper-based modality was seen to be more convenient for drawing the map, and, as can be seen in Figure 1, it seems to have been more conducive to generating more ideas. On the other hand, the computer-mediated modality was cited as more convenient for engaging in at any time or place. Further, through the Internet, students could invite more people to help generate more ideas. Thus it seems that the major benefit of the computer-mediated modality was its connection to the internet. The implications of this study are (1) CM is an effective tool for collaborative writing, and (2) writing teachers can adapt either the paper-based or the computer-based modality to best meet their students' convenience.

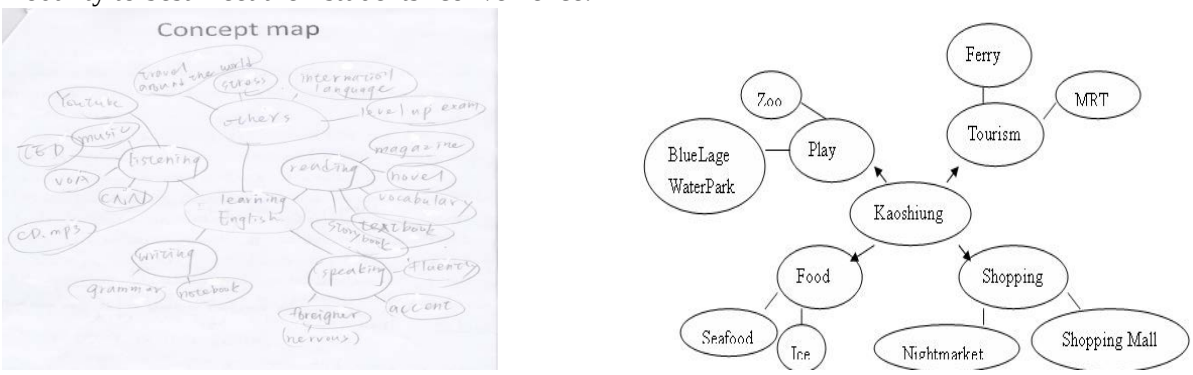

Figure 1. Samples of in paper-based (left) and computer-mediated (right) concept mapping

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