

USING CONCEPT MAP TO FACILITATE WRITING ASSIGNMENT

*Wan Azlinda Wan_Mohamed & Badrul Omar
Universiti Tun Hussein Onn Malaysia, Batu Pahat, Johor, Malaysia*

Abstract. Writing a term paper may be daunting for students, be it in primary school, secondary school, undergraduate or even postgraduate level. In this study a group of Masters level students were asked to write a paper on the theme "Quality of Life and Vocational & Technical Education". After completing the paper, the students were asked to construct a concept map based on their term paper and do a reflection paper on how they felt using the concept maps. Results show that most of students recognize that using concept maps helps them to organize their ideas and how the ideas flow from paragraph to paragraph. They also realize that if they have done the concept maps before venturing into writing this paper it would also save them a lot of time. Concept map thus help students of all ages to facilitate writing.

1 Introduction

Constructing concept map is one of the techniques that can be used for organizing and representing knowledge that include concepts, which are usually enclosed in circles or squares, and lines connecting the concepts. Concepts maps are graphics organizers that are structured hierarchically, presented in a two dimension diagrams, and shows relationships between concepts indicated by linking words. (Novak & Gowin, 1984). Many research links concepts maps for instructional purposes. For example, it was proposed for study skills, to improve reading comprehension, or review at the end of course (Winn & Synder, 1996), brainstorming activities (Yin & Shavelson, 2004), teach science related content (Odom & Kelly, 2001; Okebukola; 1990) and assessment tools (Zimmaro & Cowley, 1998).

Traditionally, concepts maps have been used as a tool to engage students in learning content knowledge. However, concepts maps can also be used as a tool to facilitate writing. Previous research indicated that concepts maps has a positive effect on the students' abilities to select concepts that appropriate to respond to a writing prompt, integrate facts into complete thoughts and writing ideas, and apply it in novel situations (Conklin, 2007). Concepts map appear to facilitate learning and how to process information and transform it in to expository writing. Concepts map provide students the freedom to express their knowledge on a given topic and present insights into the way they organize knowledge (Gouli, Gogoulou, & Grigoriadou, 2003) or as a tool to help students and teachers visualize the direction or focus of a research paper (Crane 1998).

Many students, may it be primary school students, secondary school students, undergraduates or post graduate students finds writing an academic paper such as academic paper or essays is not an easy task whatever it may be for. This is because they encounter difficulty in expressing themselves coherently in writing. In order to write a good paper, the author is able must be able to convey to the readers in a clear, coherent, easy to understand, and effectively. Readers should be able to understand the ideas that are brought forward. A well-written paper contains introductory statements that orient the readers to the topics, text structure, and purpose of the text, and that stage for the information that will follow, and concluding or summary statements that offer a wavelike function through the text simultaneously setting up and wrapping up subtopical presentations of information for readers to achieve effective communication (Halliday & Martin, 1993). Thus to write a good paper, one needs to be able to make relationships from a diversity of sources, selects the most crucial facts and details to support their position, omit irrelevant or extraneous facts, and synthesize into a coherent, well-organized argument.

Consequently, a concept map may be use as an aid in helping students structure a well organized paper. Thus, the purpose of this study is to investigate how students perceived concept maps as a tool in facilitating writing in their writing assignment. This is important to see the variety of ways the students used concept maps and how it could facilitate their writing.

2 Methodology

2.1 Sample and procedure

The sample for this study consists of a group of 34 Master's Level students, ages 25 years to 29 years, who are enrolled in the course Curriculum Development in Technical and Vocational Education in the Semester II, 2007/08 session. There are nine male students and twenty five female students.

For this study, the students were required to write a paper with any title but conforming to the theme “quality of life and technical & vocational education”. They were given three weeks to submit the paper. On the day the paper was due, the author instruct the students to construct a concept map based on what they have written and write a reflection paper on what transpires when a concept map is used. The rationale of asking the students to construct concepts maps after they have finished their written assignment is to find out if concept map is useful for the students and if it can be a tool in facilitating them to write better. They were given a week to do this.

The students were also advised that they may revise their paper if they find their paper insufficient or send in the papers without any changes after constructing the concept maps. Students were required to mark letter R (if they revised their paper) and marked letter O (if they were to send in the original papers without any correction) on the back of the submitted paper so that instructors will not be biased when grading the papers. However, in both cases they were required to write a reflection paper based on their experience when using concepts maps.

The students understood that their grades will only being based on the submitted papers and not on their concept map they drew or on their reflection paper. The grades received are compared with the grades on their previous writing assignment. The author then carried out an (document) analysis on the reflection papers which were written by the students.

3 Findings and discussion

The findings from this study provide interesting insights on the students view on how concepts help them in writing the paper. Among the titles chosen for the theme given are related to income and distribution of economy, technical & vocational education and training curriculum, human capital, life long learning, and others. Table 1 shows the frequency and percentages of the titles that the students have chosen based on the theme given.

Table 1: Frequency and percentages of titles chosen based on the theme “Quality of life and Technical & Vocational Education”

Titles related to:	Frequency	Percentage
Income and distribution of economy	10	29.4
TVET curriculum	11	32.4
Human capital	5	14.7
Life long learning	2	5.9
Others	6	17.6
Total	34	100

Although the students were given the choice either to revise or to submit the paper as it is after they have constructed the concept maps, 76.5 %, of the students opt to rewrite their papers and only 23.5 % decide to send in their paper as it is. In both cases, their grades improved from the previous writing assignment. The reason for the improvement is because the students have learnt what is required to do better from their previous assignment. Also, the students who send their paper as it is are students who are strong in writing and who has achieved a fairly good grade from the previous assignments.

Out of the thirty four students only ten students did not submit their reflection paper. Thus only twenty four reflection papers were analyzed. After analyzing the students’ reflection paper, the authors grouped the feedback based on the common themes that the students has written about on their experience when using concepts maps. Feedback of students on concepts maps based on the reflection paper that the students has written when constructing concepts map after writing the paper are shown on Table 3. The top three responses on concepts maps are 17.5 % of students believed that concepts maps are able to help them in relating ideas or connects ideas with each other, 12.3 % of students feel that ideas or contents of papers are easily generated with the use of concept maps, and 10.5 % of students considers concepts map as a visual representation of what is going to be written. Reading through the responses it can be deduced that concept maps can be a tool to facilitate their writing assignment. This is evidenced from their feedback (Table 2) and the fact they have already written the paper and still find using concept maps useful.

Table 2: Feedback of students on the usage of concept maps in their reflection paper

Response	Frequency	Percentage
1. The contents of the essay is depicted on the map	8	7.0
2. Ideas or contents of the paper are easily generated	14	12.3
3. Able to relate all the contents/idea to each other/connects different ideas	20	17.5
4. Visual representation of what is going to be written	12	10.5
5. Concepts map should be constructed prior to writing	9	7.9
6. Helps to focus on the topic	10	8.8
7. Helps sequencing the flow of writing	7	6.1
8. Concept map should be taught to all students as it help students to construct their own understanding	3	2.6
9. Summarizes the essay	2	1.8
10. Understand what need to written in the essay	6	5.3
11. Able to see what is lacking in the paper	9	7.9
12. Build confidence in learning ability	2	1.8
13. Assist in reviewing and evaluating process	1	0.9
14. Facilitate writing	6	5.3
15. Helps in planning/organize	5	4.4
Total responses	114	100.1*

* Error due to rounding

For example when using concept maps, they understand what is needed to be written in the essay (Response 10), thus enabling them to relate or connect the content/idea to each other and also connect the different ideas together (Response 3) and also helps sequencing the flow of writing (Response 7). They also find that concept maps help them focus on their topic when writing (Response 6).

For some students, concepts map is used as an evaluating tool in assisting them reviewing and evaluating their paper (Response 13). As for the researcher, the concepts maps constructed by students also help the researcher to understand quickly what the student is going to write about, thus making the job of reviewing and evaluating the paper easier. The researcher also can detect if the students are rambling out of topic or just lack of substance in their essay. Overall, comparing the initial paper and the reflective paper done by the students indicate a marked improvement in the coherency and flow of the paper. Students also find the concept map very useful in doing a self review on the papers done (Response 11).

The authors also felt that both global and sequential learners will also benefit from concept maps. This is because for global learners concepts maps will help them to build a big picture before details are added in. For sequential learners they can plan their work in sequence first by connecting the details. Both felt that concept maps is good tool for planning their writing because what they wanted to write about is already shown graphically on the concepts maps. Those who think better with visualization find this is useful too because they can put their ideas in graphical form and write from there. (Response 1). We also felt concept map is also good for the sequential people as now that could also sequence what come next on the paper and so on.

Before writing a paper, one has to have an idea of what to write. They are many ways of generating an idea, and brain storming is one of them. With the help of concept map, they also felt that they could brainstorm ideas better with the aid of concepts maps (Response 2). This is in conjunction with techniques used in brainstorming session such as fishbone diagram, morphology chart, and as such. From these responses, there seem to be a general consensus that concept maps is a useful tool for communicating ideas either in formulating and organizing a writing, evaluating or summarizing.

While writing a term paper may be a daunting task to any student, tools such as the concept map or its derivatives may ease the burden on the student to produce quality paper as required. However good the concept map may be, in the end the substance of the paper will depend on the contents and not the tools that help in organizing and produce it.

4 Summary

Concept mapping is a technique for visualizing the relationships or connections among different concepts. In this study, although the students only constructed the concept maps after they have finished written their paper, they still believed that concept map can be a tool to facilitate students in writing assignments. Students of all levels, may it be at primary school level, secondary school level, undergraduates level or postgraduate level may benefit by constructing concept map prior to actually writing their assignments because it helps them in generating ideas, able to relate the ideas or contents to each other, and also as a visual representation of what is going to be written. It helps students to focus on their topic and helps sequencing the flow of writing. It also acts as a planning and organizing tool for writing. Student of all ages would benefit using concept maps as it is easy to use. Concept map should be taught to all students as it helps students to construct their own understanding.

References

- Conklin, E. (2007). Concept mapping: impact on content and organization of technical writing in science. (Doctoral Dissertation, Walden University, USA, 2007) Dissertation Abstract International (UMI 3254433).
- Crane, M. (1998). Writing away! Out of chaos: Using concepts maps to re-envision students writin. The University of Louisville's Writing across the Curriculum Newsletter, 3(4).
- Gouli, E., Gogoulou, A., & Grigoriadou, M. (2003). A coherent and Integrated Framework using Concept Maps for various Educational Assessment Functions, [Electronic Version]. Journal of information technology Education, 2, 215-240.
- Halliday, M. A. K., & Martin, J. R. (1993). *Writing science: Literacy and discursive power*. Pittsburgh, PA: Pro-ED.
- Novak, J., & Gowin, D. (1984). *Learning how to learn*. New York: Cambridge University Press.
- Odom, A.; & Kelley, P. (2001). Integrating concepts mapping and learning cycle to teach diffysion and osmosis concepts to high school biology students. Science Education, 85, 615-635.
- Okebukola, P. A. (1990). Attaining meaningful learning concepts in genetics and ecology: an examination of the potency of the concept mapping technique. Journal of Research in Science Teaching, 27, 493-504.
- Winn, W., & Snyder, D. (1996). Cognitive perspectives in psychology. In D.H. Jonassen, Handbook of Research for Educational Communications and Technology (pp. 112-142). New York: Macmillan.
- Yin, Y., & Shavelson, R. (2004). Application of generalizability theory on concept map assessment research. (CSE Tech. Rep. No. 640). Los Angeles: University of California, national center for Research on Evaluation, Standards, and Student testing.
- Zimmaro, D. M., & Cawley, J. M. (1998). Concept map module [Online]. Schreyer Institute for Innovation in Learning, The Pennsylvania State University. Retrieved April 18 2008. Available: <http://www.inov8.psu.edu/faculty/cmmap.htm>.