

EFFECTIVENESS OF COLLABORATIVE CONCEPT MAPPING AMONG B.ED TEACHER TRAINEES

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Received Oct. 15, 2017

Accepted Nov. 20, 2017

ABSTRACT

Collaborative concept mapping is a method where in concept maps or mind maps are used in group discussion with a group of students. Concept maps are shortcuts to learning huge concepts and when it is done in social setting it becomes collaborative concept mapping. This study explores the effectiveness of this method using pre-test, post-test experimental design from a sample of 60 B.Ed teacher trainees.

Key words: collaborative concept mapping, B.Ed teacher trainees.

INTRODUCTION

Several classroom practices were been practiced according to the content, context and the type of learners. A varied variety of teaching strategies are available, but relatively learning methods are very few. Different learning methods are used for the optimum learning to occur among the learners.

Learning methods could be individualistic or group centered. Group learning takes place in a social setting, whereas in individual learning only one learner is involved. Comparing individual and group learning, both shares its own merits and demerits. Certain constructivistic outcomes of learning can be obtained by the application of collaborative group learning efforts. Thus when we integrate an ideal learning method in a group-learning environment, the learning outcomes could be holistic working at cognitive, behavioral and affective domains. This article discusses upon the integration of collaborative learning and concept mapping to form a new learning method, wherein the social energy and the mental energy are incorporated to yield maximum outcomes.

STUDY RESULTS

A pre-test post-test homogenous group experimental design was used study the effect of collaborative concept mapping over traditional lecture method in fostering creativity among B.Ed students. In this study only the creative outcomes of the students were taken for test consideration.

The results revealed that there was significant mean difference between the two groups in the post-test ($t=4.12$) proving that collaborative concept mapping was effective compared to traditional lecture method in fostering creativity among the teacher trainees.

COLLABORATIVE LEARNING

Classroom learning takes place in social learning situations. During the process of teaching usually there is an interaction between the teachers and students. Classroom interaction could be structured by using interaction between teacher-student, student-student.

In this way a collaborative learning atmosphere is created in the classroom and thereby facilitating learning at a rapid pace. In a collaborative learning atmosphere both the teacher and student play an important role in the learning process.

This learning refers to methodologies and environments in which learners engage in a common task in which each individual depends on and is accountable to each other. Groups of students work together in searching for understanding, meaning or solutions or in creating an artifact of their learning such as a product. Collaborative learning activities can include collaborative writing, group projects, and other activities.

Three Theoretical Perspectives of Collaborative learning/ group learning

- Behavioral
 - Groups stimulate and punish
 - Groups offer more pros than they do cons.
- Cognitive / Constructivist
 - Knowledge and Learning are social in nature.
 - Learning comes from figuring out unexpected occurrences together.

- Social Interdependence
 - Cooperative
 - Group as a 'dynamic whole'
 - Positive Tension
 - High levels of interaction
 - Competitive
 - Negative Tension

Assignments in Collaborative learning

1. Same problem, case, or question
2. Making a specific choice
3. Simultaneously reporting of group responses.

CONCEPT MAPPING

Concept mapping is a type of knowledge representation. (Jonassen & Grabowski 1993). Representing knowledge in the visual format of a concept map allows one to gain an overview of a domain of knowledge.

Concept mapping can be used for several purposes:

- To generate ideas (brainstorming)
- To design complex structures (long texts, hypermedia, large web sites)
- To communicate complex ideas
- To aid learning by explicitly integrating new and old knowledge and
- To assess understanding or diagnose misunderstanding.

Mapping texts

Mapping is a technique that conveys the meaning of the important relationships between in text by representing them in an interconnected diagram. Mapping is done by identifying seven basic relationship in the text.

1. Example
2. property
3. compare/ contrast
4. temporal
5. causal
6. enabling
7. conditional

Mapping ideas

Complex ideas could be represented by means of the technique of concept mapping. The flow of different ideas for a particular concept could be represented in the form of diagram.

Rational For Mapping

Theories and empirical findings from many areas of psychology and educational psychology explain how the process of mapping facilitate create creative ideas. When mapping is done the learner uses divergent thinking for drawing out different possible appropriate answers. Mapping involves association of ideas in a prescribed context and transformation of this flow of ideas in the form of diagram. When the association is appropriate with the level of the content, new ideas could be generated, thus leading to creativity. Concept maps created aids as a tool in retrospective thinking since the process of thinking is represented in the form of diagrammatic ideas.

Strategies for concept mapping

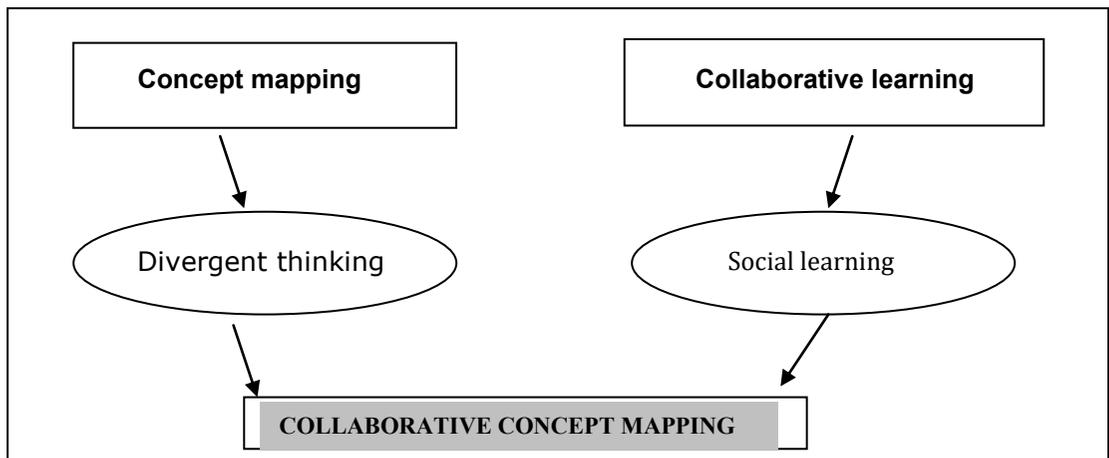
Following are the strategies that could be used to make concept map diagrams of text, ideas, facts etc..

- Start at the center of the page
- Don't be serious!
- Free associate
- Think as fast as you can
- There are no boundaries
- Don't judge too fast
- Go, go, go....
- Add relationships and connections (from Buzan Organization pvt. Ltd.)

COLLABORATIVE CONCEPT MAPPING

Applying concept mapping with collaborative learning atmosphere can play a better way in learning concepts holistically and collaboratively. Here students learn the new ideas by using mapping and such maps are formed by the group activities and each and every students contribute their part for the formation of a concept map.

Collaborative concept mapping is the integration of the technique of the concept mapping and collaborative learning atmosphere. This method facilitates learning in a 2 dimensional model viz: Social learning and divergent thinking. Learning occurs by means of participation and thinking to solve a common problem. The solution derived to such common problems will be holistic, since each member of the group use their divergent thinking and generate new ideas.



Two dimensional model of Collaborative concept mapping

Collaborative concept mapping- steps

Following are the steps in collaborative concept mapping:

1. orientation

The entire classroom is oriented towards a common goal and common problem. Students are presented with a complex common problem. The problem is clearly stated and defined.

2. Incubation

Students take time and work on the particular problem individually. Each one thinks on the way to arrive at the solution of the problem. A particular time is given for them to work on the problem.

3. Interaction

Students now interact upon their way to solve the problem and they discuss upon the problem in terms of its methods to solve the problem. On this step students could be grouped if needed for easy interactions. Student group of 6-7 members are formed with a leader to represent the group ideas.

4. Representation

The ideas identified by students are represented in the form of a common concept map by the teacher. All the teams ideas are represented by the teacher to common map.

5. Discussion

Based on the students concept map, the teacher discusses the content and students and teacher discuss upon the correct or easy solution to the given problem.

6. Conclusion

Based on the discussed and represented facts , the correct solution is concluded the teacher.

Applications of collaborative concept mapping

1. Creativity Tool

As one puts ideas down on paper without criticism, the ideas become clearer and the mind becomes free to receive new ideas. These new ideas may be linked to ideas already on the paper, and they

may also trigger new associations leading to new ideas. Creative process is thus manifested by the concept mapping technique.

2. Building positive relationship

In a collaborative learning environment there is a scope for development of relationship during the process of learning and such relationships emerges based on the basis of similar study skills and cognitive processes among students.

3. Communication Tool

A concept map produced by one person represents one possible way to structure information or ideas. This is something that can be shared with others. A concept map produced by a group of people represents the ideas of the group. In either case, concept mapping can be used as a communication tool for people to use to discuss concepts and the relationships between the concepts. They may try to agree on a common structure to use as a basis for further action.

4. Learning Tool

Constructivist learning theory argues that new knowledge should be integrated into existing structures in order to be remembered and receive meaning. Concept mapping stimulates this process by making it explicit and requiring the learner to pay attention to the relationship between concepts.

5. Assessment Tool

Collaborative Concept maps can also be used as assessment tools. The concept maps drawn by students express their conceptions (or their misconceptions) and can help the instructor diagnose the misconceptions that make the instruction ineffective.

6. Solution to complex problems.

Collaborative Concept mapping is also gaining inroads as a tool for problem solving in education. Concept mapping may be used to enhance the problem-solving phases of generating alternative solutions and options. Since problem solving in education is usually done in small groups, learning should also benefit from the communication enhancing properties of concept mapping.

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