
Research Papers



EFFECTIVENESS OF MIND MAPPING IN EDUCATIONAL PSYCHOLOGY

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ABSTRACT

The present study is aimed to study the effectiveness of mind mapping in teaching Educational Psychology. For the study, 40 M. Ed. Student-teachers were selected. 'Pre-test Post-test Single Group Design' was used. The unit 'Growth and Development' was selected for teaching through mind mapping. The points namely, concept of growth and development, principles of development, fields of development, stages of development, theories of development and role of teacher and parent in growth and development of child were linked by using concept map and each concept was again presented by using mind map.

Then each point and sub point related to it is also joined each other. The content test was prepared on the selected content. It was used as pre-test and post-test before and after teaching through mind mapping respectively. The data was collected through pre-test and post-test which is analyzed by using 't' test. The results revealed that there is a significant difference between pre-test and post-test mean scores of M. Ed. Student teachers. Mind mapping was found effective in teaching Educational Psychology.

INTRODUCTION

There are many methods of teaching, but usually teacher selects a particular method based on the needs of the content, teaching facilities available, ability of students and the philosophy of the teacher. If the teaching is to be improved, the teacher must become aware of the present situation and improvement in all aspects. Good teaching occurs; when the teachers teach the subject and create desire to learn about the subject among the students. To be good teacher the individual must be able to deal effectively with the students. Suitable method of teaching is to be based on needs of the learner and the nature of the content, therefore teacher selects and uses any particular teaching method, he should focus on how and what pupil learn. David Ausubel (1963, 1968, 1977) also strongly refutes the allegation that learning through listing, watching or reading is necessarily rote, passive or non-meaningful. He argues that breeding of such passively & non-meaningfulness is the result of the faulty ways and means adopted by the teacher for the presentation of the learning material. He argues that every learner at any specific stage and period of his learning has his own cognitive structure for the learning or acquisition of a piece of knowledge. New ideas can be learned or retained only to the extent that they can be related to already available cognitive structure in the form of knowledge of facts, concepts. It provides needed linkage in

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terms of ideational anchors. This task may happen properly when a teacher tries to sequence the material to be learned and presents it in such a way that ideational anchors are provided. Proper prior organization of the learning material & presenting it in a properly organized way, it helps the learner to enrich & strengthen his cognitive structure by acquiring and retaining the new knowledge. Therefore, teacher should try to present the learning material so skillfully before the students as the learner feels no difficulty in hooking the new knowledge with his existing cognitive structure.

RATIONALE

Mapping has been used in a variety of context and has developed into a tool used to represent an individual's or group's knowledge and ideas about one particular theme. Mind maps has a hierarchical structure and are produced following connections (Novak & Govin, 1984; Buzan, 1993; Novak, 1990; Brinkmann 2003). For mind mapping, these involve placing the topic in the center of the page or screen. Primary branches are drawn for each major idea linked to the topic. Key words indicating the major ideas are written directly into the links. From the primary branches further sub-branches for secondary ideas (subtopics) are drawn. The principle is that ideas should move from the abstract to the concrete. In mind mapping, each main branch builds up a unit with its sub-branches. For the sake of simplicity, connections between the sub-branches of different main branches are not drawn (Brinkman, 2003) most map involve the use of colors, images, sketches and symbols. Lines are drawn from higher concepts to lower concepts to which they are related and between concepts on the same level.

Researcher reviewed the related researches. Al-Jarf, R. (2009) showed significant difference between the experimental and control groups as a result of using the mind mapping software in writing. Anokhin, P. K. (1973) reported that use of mind mapping for lesson planning can help teachers trainers identify a logical plan or teaching route & increases recall of the subject matter. D'Antoni, A. V., Zipp, G. P., Olson, V. G. (2009) demonstrated that medical students using mind maps can successfully retrieve information in the short term. The research of Evrekli, E., Balim, A. G. and Inela, D. (2009) revealed that mind maps provide an effective study technique when applied to written material. Mind mapping improved the long term memory of factual information in their participants by 10%. Goodnight, K. & Long, R. (2002) found that students perceived mind mapping as entertaining & interesting approach and though that mind mapping enhanced their learning. Most of the students preferred individual mind map, some preferred group mind map. The teacher enjoyed using mind mapping & thought that it fostered student motivation in learning science. Paykoc, F., Mengi, B., Kamay, P.O., Onkol, P., Ozgur, O. & Yildirim, H. (2004) found that an exercise involving mind mapping software provided a useful focus for pupils to organize their thoughts to present information clearly & attractively and facilitate communication. The findings of Toi, H. (2009) revealed that the application of mind mapping in planning is a useful writing strategy that can improve students writing. In The review shows that very few researches are done on mind map & concept, in particularly in India. Researchers should pay their attention towards it. So the present study is very needy in the field of teacher education.

OBJECTIVES

The following objectives were decided in the present study.

- 1.To study the effectiveness of mind mapping in understanding the concepts of Educational Psychology.
- 2.To study the effectiveness of mind mapping in understanding the theoretical part of Educational Psychology.

HYPOTHESES

The following hypotheses were formulated in the present study.

1. There is no significant difference between pre-test & post-test mean scores related to concepts in Educational Psychology of M. Ed. Student teachers taught through mind mapping.
2. There is no significant difference between pre-test & post-test mean scores related to theoretical part of Educational Psychology of M. Ed. Student teachers taught through mind mapping.

DESIGN

In present study, 'Pre-test Post-test Single Group Design' was used. Two achievement tests were prepared. One test was on the understanding of concepts and second was on understanding of the theoretical part of the content unit 'Growth & Development'. These tests were administered on the M. Ed. Student teachers. Then the content was taught through concept map & mind map for two months. At the end of teaching, the same tests were administered on the same group as post-test.

SAMPLE

All 40 M. Ed. Student teachers admitted in the academic year 2010-2011 of the Department of Education, North Maharashtra University, Jalgaon, Maharashtra State were selected by the purposive sampling technique for conducting the experiment.

TOOLS

The data were collected through the following tools in the present study.

1. Achievement test T1 on understanding the concepts in the unit, 'Growth & Development' of Educational Psychology.
2. Achievement test T2 on the theoretical part of the content 'Growth & Development' of Educational Psychology.

PROCEDURE

In present study, the content unit 'Growth & Development' of Educational Psychology was selected for the experiment. It includes sub points namely, concept of Growth and Development, Principles of Development, Fields of Development, Stages of Development, Theories of Development and the Role of Teacher & parents in Growth & Development. On the selected content unit, two achievement tests T1 & T2 were prepared respectively related to the concepts & theoretical part in the content. Before teaching, these tests were administered as pretest on M. Ed. student teachers.

Before actual teaching the content, mind map of each sub point was prepared. While teaching each sub point, mind map was also presented to explain the structure of related point of the concepts. Student teachers were also participated in teaching learning. They clarified their doubts. After teaching of first two concepts, by using mind map, these two concepts & theoretical part were linked each other by using mind map. After teaching of next sub point, it was joined to previous mind map gradually. In teaching of each sub topic, mind map was used. In recapitulation step of each teaching period, they were asked to prepare the mind map. They participated in it very interestingly.

At the end of treatment, the same tests were administered as posttest and data were collected in the form of scores.

ANALYSIS AND INTERPRETATION OF COLLECTED DATA

First hypothesis of this research paper was that there is no significant difference between pre-test & post-test mean scores related to concepts of Educational Psychology of M. Ed. Student teachers taught through mind map. The data related to this hypothesis was analyzed with the help of 't' test. The result is given in Table No. 1.

TABLE No. 01

The Mean, Standard Deviation and 't' values of Pre-test and Post-test Scores related to concepts Educational Psychology of the Student Teachers Taught Through Mind Mapping

Content Topic	Test	Mean	Standard Deviation	Coefficient of Correlation 'r'	't' value
Concepts in Growth & Development	Pre test	18.27	4.39	0.61	15.29
	Post test	23.63	3.72		

The above table indicates that the 't' value (15.29) is significant at 0.01 level . Hence it can be inferred that there is a significant difference between pre-test and post-test mean scores related to concepts of the student teachers taught through mind mapping.
Second hypothesis of this research paper was that there is no significant difference between pre-test & post-test mean scores related to concepts of Educational Psychology of M. Ed. Student teachers taught through mind mapping. The data related to this hypothesis was analyzed with the help of 't' test. The result is given in Table No. 2.

TABLE No. 02
The Mean, Standard Deviation and 't' values of Pre-test and Post-test Scores related to Theory in Educational Psychology of the Student Teachers Taught through Mind Mapping

Content Topic	Test	Mean	Standard Deviation	Coefficient of Correlation ‘r’	‘t’ value
Theory in Growth & Development	Pre test	17.87	5.35	0.58	3.98
	Post test	21.42	4.11		

The above table indicates that the 't' value (3.98) is significant at 0.01 level . Hence it can be inferred that, there is a significant difference between pre-test and post-test mean scores related to theory part of the student teachers taught through mind mapping.

RESULTS AND DISCUSSION

As per analysis and interpretation of the data, the following results were drawn.
1. There is a significant difference between pre-test & post-test mean scores related to concepts in the content 'Growth & Development' of Educational Psychology of M. Ed. Student teachers taught through mind mapping.
2. There is a significant difference between pre-test & post-test mean scores related to theory in the content 'Growth & Development' of Educational Psychology of M. Ed. Student teachers taught through mind mapping.

From the above table, it can be conclude that, the use of mind mapping and concept mapping is effective in understanding & acquiring the new concepts and the theory in the content of Educational Psychology. These findings are supported by results Al-Jarf, R. (2009), Anokhin, P. K. (1973), D'Antoni, A. V., Zipp, G. P., Olson, V. G. (2009), Evrekliia, E., Balim, A. G. and Inela, D. (2009), Toi, H. (2009). The possible reason behind it may be as the classes are usually dominated by teacher-centered, direct instruction and often rely heavily on textbooks for the content of the course. Information and instruction are separated in to parts that make up a whole concept. The teachers seek to transfer their thoughts and meanings to the passive students. There is little room for student-initiated questions, independent thought or interaction between students. But mind maps are most valuable when the key objectives is to be develop a comprehensive understanding of all concepts involved in a subject area. Therefore, it can be concluded that the use of mind mapping in understanding & acquiring the new concepts and the theoretical part in the content 'Growth & Development' of Educational Psychology is effective and beneficial.

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