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EFFECT OF METACOGNITION INTEGRATED MULTIMEDIA LEARNING PACKAGE (MIMLP) ON THE ACADEMIC ACHIEVEMENT OF RURAL AND URBAN B.ED. TRAINEE TEACHERS

RISHI KUMAR & GURKIRAT KAUR

School of Education, Desh Bhagat University, Mandi Gobindgarh, Punjab, India

ABSTRACT

This study was conducted on 100 rural and urban B.Ed. trainee teachers to find out the influence of Metacognition Integrated Multimedia Learning Multimedia Package (MIMLP) on the Academic Achievement. The investigator hypothesized that the achievement in Educational Psychology of B.Ed. trainees taught using Metacognition Integrated Multimedia Learning Package (MILP) will significantly be higher than that of those who will be taught through the Present Method of Teaching. The results showed that there is a significant mean difference in the achievement between the rural and urban students of B.Ed.

KEYWORDS: Metacognition Integrated Multimedia Learning Package

INTRODUCTION

Every nation on this earth now trying to be the best in the world, but this cannot be done without the help of teacher educators. Teachers in the present scenario have a responsibility of enriching the student with current and latest information through effective instructional strategies. For proper cognitive development, it is important to understand the thinking process of the child. The most of the educational and psychological theories laid emphasis on learner's awareness for the cognitive process. So a teacher educator must be aware of cognitive process. In simple words, we can call this metacognition. Metacognition is just thinking about thinking. The conventional teaching methods are not sufficient to arouse interest in learning among the students and do not meet up to the intellectual, psychological and emotional needs of the students. The methods of teaching need to be changed. The modern teaching concept holds the view that it is more learner centered and learner driven. Education has been undergoing a slow evolution; from teacher centered system to a learner- centered system, and this demands changes in the instructional process and materials used for making the process more effective. In the teaching-learning process, learner is to be active and learning should affect desirable changes in behaviour, in habits, style of living, adjustment of knowledge, skills etc. It aims at maximizing learning experience (Kumar, 2011).

Metacognition guides learner decisions on task choice, the effort they will spend and the strategies chosen. The metacognitive strategies activate the learner's relevant knowledge about their own strengths and weaknesses pertaining to the task as well as their motivation for completing a task. Computer helps children to become less dependent on the teacher. It lessens the memorizing work and increases more information handling and problem solving capabilities. It encourages collaborative learning rather than competing with other children. Multimedia, defined as a combination of some or all of the elements of text, graphics, animation, sound and video using a computerized platform is becoming more

widely recognized as an effective enhancement mechanism for education, in concert with the continual expansion of the technological arena (Baron and Orwig, 1995). The visual spatial learning methodology is of great importance to many learners and the relative ease with which education professionals can now create and utilize multimedia files has opened the door for extensive development and investigation (Gardener, 1983). Multimedia technology has many applications in the classroom. Integrating multimedia technologies into educational thematic units seems to be a solution to the problem of student motivation and involvement in subject that is relative to their own interactions with society.

Investigator has prepared a learning package which is a collection of instructional material designed for specific learning outcomes. The design is guided by the instructional objectives designed for the course curriculum. The package helps the teacher to obtain desired learning outcomes in students and helps the students to achieve the learning outcomes. The package was named as Metacognition Integrated Multimedia Learning Package (MIMLP) to enhance the academic achievement of the B.Ed. trainee teachers.

REVIEW OF LITERATURE

Ranade (2004) found out the effectiveness and critical evaluation of a computer Assisted Instructional Package developed for teacher educators. The major findings were- since information on Multiple Intelligence is not readily available in book, the content of the presentation was very useful and those teachers who have almost totally computer illiterate, felt motivated to learn computers after seeing their usefulness in teaching- learning.

Benjamin & Sivakumar (2007) In their article "Multimedia enhances effective self - learning" emphasized the need and importance of learning through multimedia CD-based self learning, and dwells on the quality as well as quantity of teaching and learning bringing forth the need and significance of learning science through self -learning with the help of multimedia CD-based courseware.

Reddy et al (2009) found out the effectiveness of Multimedia based modular instruction on the achievement in science of the problem students. Two matched groups of problem students were constituted for the experiment. The control group problem students were given routine treatment during the school hours. The experimental group problem students were subjected to Multimedia based modular instructional strategy for a period of three months. The obtained results established the effectiveness of Multimedia based modular instruction on the achievement m science of the problem students.

Anboucarassy (2010) was undertaken a study to find out the Effectiveness of Multimedia in teaching Biological science to IX standard students. The study revealed that there was a significant difference in the achievement of the experimental group and control group. The multimedia helped the students in experimental group to sustain their interest and also their retention power compared to the traditional method of teaching.

Ercan (2014) implemented multimedia learning material developed for the 5th grade science course topic “Food and Healthy Nutrition” and examined its effect on students’ academic achievement and science attitudes. The study used a control group, a pre-test-post-test quasi experimental research design, and a convenience sample consisting of 62 5th grade students. The research instruments were an achievement test and a science attitude scale. This study showed that multimedia learning promotes more effective learning in science education.

Kaur and her coworkers (2015) found that the multimedia package prepared by researcher for teaching English

was more effective for academic achievement of class 8th students in English.

Objectives of the Study

To study the academic achievement of rural and urban B.Ed. trainee teachers after Metacognition Integrated Multimedia Learning Package (MIMLP)

Hypothesis

The achievement in Educational Psychology of B.Ed. trainees taught using Metacognition Integrated Multimedia Learning Package (MILP) will significantly be higher than that of those who will be taught through the Present Method of Teaching.

METHODOLOGY

The present study aimed to develop a Metacognition Integrated Multimedia Learning Package (MIMLP) for B.Ed. trainee teachers. The necessary data for the study was collected through survey method as well as experimental method Normative survey method was used by the investigator to find out the existing level of metacognitive awareness of B.Ed. trainee teachers. The analysis of the data reflected that the metacognitive awareness of B.Ed. trainee teachers is at a lower level. This prompted the investigator to go to the next part of the study.

Sample

A sample of 100 B.Ed. trainee teachers was selected from the Desh Bhagat University, Mandi Gobindgarh, and Punjab. Stratified random sampling technique was adopted by giving due representation to gender. The locale wise distribution of the sample was 66 rural and 34 urban.

Tools Used

Metacognition Integrated Multimedia Learning Package (MIMLP)

The investigator decided to integrate the metacognitive knowledge aspects and the metacognitive regulation aspects in the multimedia learning package to improve the quality of the teaching learning process. The learning package consists of about 200 slides with three video presentations on the topic learning.

Achievement Test

Academic achievement is the performance of the pupil's accomplishment in a subject of study. Academic achievement is important to assess the progress made by the individual in whole educational programme. The investigator self prepared the achievement test. The topics selected for preparing the achievement test were- brief overview of learning, laws and domains of learning, factors affecting leaning, classical conditioning, operant conditioning, learning insight and trial and error theories. The achievement test consists of 62 questions in the draft which was reduced to the 50 questions in the final form of the test. The rejected questions were selected on the basis of the Difficulty Index and Discriminating power. The difficulty index less than 0.25 or more than 0.75 and discriminating power less than 0.03, were rejected from the draft of the Achievement test.

Scoring procedure

For each question, four to five choices were given. Two marks were given to each correct answer.

Administration of the Draft Test

From Desh Bhagat University, Mandi Gobindgarh, 100 B.Ed. trainee teachers were selected for administering the draft test. The question papers were distributed to the students after giving clear instructions. More than 90°/o of the students completed the test in 40 minutes. The response sheets were collected, scored and analyzed by means of item analysis.

Item Analysis

Item analysis was done using the method suggested by Ebel and Friesbie (1991). The response sheets of students were scored. 50 response sheets were obtained for analysis. The response sheets of 100 B.Ed. trainees were arranged in the descending order of their total scores where there are ties, students getting high scores in the first few items were put at the top. The number of subjects marking the correct answer for an item in the high achieving group (U) and low achieving group (L) were counted and thus calculated the difficulty index and discriminating power.

- **Difficulty index**

  The difficulty index of each item was calculated using the formula.

  D.I = U+L/2N

- **Discriminating power**

  The discriminating power of the items was calculated using the formula.

  D.P = U-L/N

Items having difficulty index between 0.25 and 0.75 and discriminating power above 0.3 were selected for the final test. The draft form of achievement test and difficulty index and discriminating power of the items in the achievement test.

Validity Test of Achievement Test

The statistical validity of the test was established by correlating the test scores with qualifying examination marks. The validity coefficient was computed by Pearson product moment method and has got validity r=0.91 when calculated on a sample of 100 students.

RESULTS AND DISCUSSION

The difference in achievement of B. Ed. trainees taught using Metacognition Integrated Multimedia Learning Package (MIMLP) that of those who will be taught through the Present Method of Teaching are given in table 1

Table 1: Mean Score of Achievement Test

Groups	Number	Average
Post Test Experiment Group Rural	32	77.25
Post Test Experiment Group Urban	18	72.44
Post Test Control Group Rural	34	70.47
Post Test Control Group Urban	16	71.75

Table 1 depicts the difference in the achievement test of control group of rural (70.47) with the experimental

group of rural (77.25) and same for the urban groups (control 71.75; Experimental 72.44). The results showed achievement test scores of the B.Ed. trainee teachers was increased in the post test after teaching them through Metacognition Integrated Multimedia Package (MIMLP).

Figure 1 clearly demonstrates the difference in the achievement test in rural and urban control and experimental groups. This figure showed the significance of MIMLP in contrast to the present methods of teaching to the students. The figure also describes that the academic achievement scores of urban students were more improved than the rural after being taught by the MIMLP.

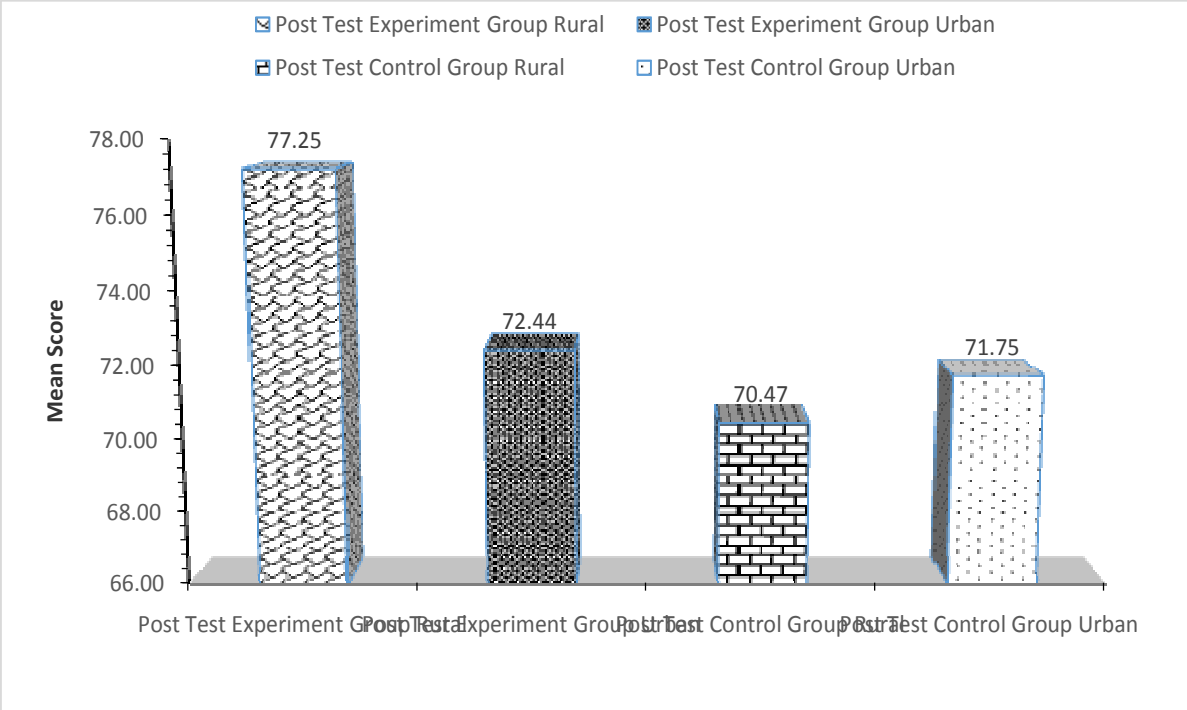

Figure 1: Post-Test Rural & Urban mean Score in the Achievement Test of B. Ed. Trainees in Experiment and Control Group

Table 2 describes the ANOVA test among and between groups of rural and urban in the achievement test of the B.Ed. trainee teachers. The F value was observed as 3.46 at p 0.05 level. These results showed significant differences in the achievement of the rural and urban students after being taught by the MIMLP.

Table 2: Post-Test Difference in Rural & Urban Score in the Achievement Test of B. Ed. Trainees in Experiment and Control Group

ANOVA						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-Value**	**F Critical**
Between Groups	660.19	3	220.06	3.46	0.019	2.69
Within Groups	6091.99	96	63.45			
Total	**6752.19**	**99**				

CONCLUSIONS

An appropriate educational technology in the hands of competent teachers can ensure better teaching-learning process. Multimedia IS a unique medium with features of quality, audio visual recording and instant feedback. It can be

conveniently used to convey well-designed information with varying special effects. Metacognition is defined as an awareness of our thinking as we perform specific tasks, and using this awareness to control what we are doing. Metacognitive strategies are very essential to achieve success in any learning and to acquire higher thinking skills.

The study examined the effect of MIMLP on the achievement of the B.Ed. trainee teachers. The investigator decided to prepare a Metacognition Integrated Multimedia Learning Package (MIMLP) in order to improve the metacognitive ability as well as achievement in the subject matter. Studies revealed that the rural and urban students achievement test positively affected by the MIMLP. Also, urban student's achievement scores were found to be more improved as compared to the rural students. Hence the effectiveness of prepared package was found with respect to the academic achievement.

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