"There are only two powers in the world, the sword and the pen, and in the end the former is always conquered by the latter."

-Napoleon

Chapter -VII

SUMMARY
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7.1 INTRODUCTION
One of the most important goals of teacher education is to improve academic achievement of the pre-service teachers. There is an urgent need to practice alternative education programmes or instructional strategies to solve the problem pre-service teacher’s poor achievement as well as an attempt to provide environment and teaching method that meets the needs of pre-service teachers. Among the strategies outlined in the new reform movement for teaching Educational Psychology, there is a strong recommendation for using Multimedia Learning Package Method. MMLP is an instructional technique designed to promote the academic development of pre-service teachers. It is one of the most innovative techniques used by educationists throughout the world.

The present study is an attempt to study the effectiveness of a Multimedia Learning Package for teaching of Educational Psychology. The study establishes the effectiveness of MMLPs by comparing the achievement scores of Pre-service teachers (B.Ed. Class) of two groups (experimental and control group) by teaching 5 selected topics in Educational Psychology. The result of the present study is exerted to benefit the pre-service teachers, teachers and educators. Keeping in view the importance of Educational Psychology, the present study was planned. Educational Psychology is selected, as it is the one of the most important subjects in the pre-service teacher’s curriculum.

7.2 NEED OF THE STUDY
Experimental studies show that MMLP based learning strategy has positive benefits to pre-service teachers and teachers both with enhanced academic achievements and joyful learning environment. Educational Psychology is considered to be an exceptionally difficult subject. For the qualitative improvement in Educational Psychology teaching-learning process, multimedia can prove as a big breather. It sustains the interest of the pre-service teachers, through visuals and audio and successfully brings in the elements of the outer world into the classroom. It can help
pre-service teachers in understanding the complex concepts in a very simple way. Today more emphasis is laid upon the experience rather than rote learning. So keeping all the above mentioned factors in mind, the investigator decided to develop Multimedia Learning Package to teach Educational Psychology to the pre-service teachers in a joyful way.

7.3 STATEMENT OF THE PROBLEM
EFFECTIVENESS OF A MULTIMEDIA LEARNING PACKAGE IN EDUCATIONAL PSYCHOLOGY FOR PRE-SERVICE TEACHERS

7.3.1 OPERATIONAL DEFINITION OF THE KEY TERMS
The terms use in the statement of the problem is defined as under:
1) **Effectiveness** - Empirical usefulness with respect to achievement of objectives.
2) **Multimedia Learning Package** - The word Multimedia simply means being able to communicate in more than one way. So Multimedia Learning Package (MMLP), by definition has the capacity to deliver large amounts of materials in multiple forms meant for teaching, and to deliver them in an integrated environment that gives pre-service teachers the reading, listening and viewing experience through amalgamation of text, audio, video, graphics and animation. There may be use of one or more mediums to present a concept depending on the need.

7.4 OBJECTIVES OF THE STUDY
1. To develop the Multimedia Learning Package for pre-service teachers.
2. To validate the Multimedia Learning Package for pre-service teachers.
3. To develop Online Achievement Test for the students of experimental group.
4. To develop Opinionnaire to seek the opinion of teacher-educators about the effectiveness of multimedia as a teaching – learning strategy for pre-service teachers.
5. To study the mean achievement scores of two groups of pre-service teachers in Educational Psychology before the experimental treatment.
6. To compare the mean achievement scores of two groups of pre-service teachers taught Educational Psychology with and without the use of Multimedia Learning Package after the experimental treatment.

7. To compare the mean gain achievement scores of two groups of pre-service teachers taught Educational Psychology with and without the use of Multimedia Learning Package after the experimental treatment.

7.5 HYPOTHESES

In terms of hypotheses, the objectives of the study would translate themselves as:

H1 At the end of experimental treatment, the group of pre-service teachers taught Educational Psychology through MMLP (Multimedia Learning Package) scored significantly higher on the achievement test than the group of students taught through the traditional method.

H2 At the end of experimental treatment, the group of pre-service teachers taught Educational Psychology through MMLP (Multimedia Learning Package) showed significantly higher gain score on the achievement test than the group of students taught through the traditional method.

7.6 DELIMITATIONS OF THE STUDY

The present study was delimited to:

- Pre-Service teachers of two sections of B.Ed. of Pradeep Memorial Comprehensive College of Education, Delhi.
- Multimedia Learning Package based on five topics of Educational Psychology.
  Five topics were selected from the syllabus of various universities of Educational Psychology of B.Ed.
  - Growth and Development
  - Learning
  - Motivation
  - Personality
  - Basic Statistics
- 45 days of the academic session.
7.7 DESIGN OF THE STUDY

Educational research is described as experimental, when the researcher has firstly, specified a set of researchable hypotheses and secondly, has established a systematic program of data gathering under precisely defined conditioned in an effort to test this hypotheses provide a network of statements relating the impact of an independent variable or a set of independent variables on some outcome variables or dependent variable(s) (Ingersoll, 1982).

Weiner (1977) rightly remarked that the experimental method which is suitable for testing hypotheses is the strongest method for developing and understanding psychological concepts. Any experimental problem has two inter related aspects, the design of the experiment and statistical analysis of the data. The latter aspect, statistical methods can greatly increase the efficiency of an experiment and also strengthen the conclusions so obtained.

In the present study pre-test, post-test group control quasi-experimental design was employed in the form of intact sections of B.Ed. class of the same college. It involved two groups of pre-service teachers, experimental group and control group. The experimental group was taught through MMLP (Multimedia Learning Package) and the control group was taught the same content through conventional method. The design comprised of three stages. The first stage of the study involved testing of pre-service teacher’s achievement in both the groups. The second stage involved experimental treatment. The experimental treatment consisted of teaching five units to pre-service teachers (B.Ed.) of Educational Psychology through MMLP to experimental group and through conventional method to control group. In the third stage the pre-service teachers of both the groups were post-tested on achievement in Educational Psychology.

7.8 SAMPLE

Sampling is a technique by which a relatively small number of individuals or measures of individuals, objects or events are selected and analysed in order to find
out something about the entire population from which it is selected. Sampling technique reduces the expenditure, saves time and energy, permits measurement of greater scope or produces greater precision accuracy. In all types of researches, there are some inferences regarding a well specified and identifiable group known as population and the selected number of persons or objects is known as sample. Sample is the representative proportion of the population.

In the present study purposive sampling technique was followed for the selection of the college of Education, only one college i.e. P.M.C. College of Education, Delhi was chosen for the study. The sample of the present study comprised 100 pre-service teachers studying in two sections of the B.Ed. of P.M.C. College of Education, Delhi. One section formed the control group and other one section formed the experimental group. Both the groups have 50 pre-service teachers each. (Appendix A)

7.9 TOOLS USED
For the present investigation the following four tools were used:-
1. Online Achievement Test
2. Opinionnaire for teacher educators
3. Development of MMLP for Instructional Treatment
4. Home Page

7.10 PROCEDURE
Procedure of the experiment comprised of two main stages, which are selection of the sample and conducting the experiment.

Stage 1: Selection of Sample:
The sample of study comprised of 100 pre-service teachers (50 as control group and 50 as Experimental group) studying in P.M.C. College of Education, Delhi

Stage 2: Conducting the Experiment
The experiment was conducted in three phases as given below:-
Phase 1: Administration of Pre-test
Phase 1: Administration of Pre-test:
The phase involved the administration of the Achievement Test to the pre-service teachers of the experimental group and control group. Separate response sheets were provided. The answer sheets scored with the help of scoring key. The scores indicated the previous knowledge possessed by the pre-service teachers, their achievement in Educational Psychology.

Phase II: Conducting the Instructional Programme
To find out the efficacy of the treatment variables, the Multimedia Learning Package treatment was given to the experimental group and control group was taught under traditional instructional setting.

The instructional treatment was given for 45 days which included 5 topics selected from the syllabus. The experimental group was taught using Multimedia Learning Package method where as the control group was taught by the traditional method. Same content was taught to both the groups for the same time period.

Phase III: Administration of the Post-Test
Immediately after the instructional treatment was over, the pre-service teachers were assessed on criterion measure to know the effect of the treatment.

The following test was administered to both the experimental and control groups.
- Achievement Test in Educational Psychology

7.11 STATISTICAL ANALYSIS
The following statistical techniques were employed to analyse the data obtained from the experiment to test the hypotheses.

Descriptive statistics such as means, S.D's and 't' test were worked out on the score of achievement.

7.12 FINDINGS:
i) The result arrived during this study show that the post test achievement mean scores of the experimental and control groups, differs significantly in favour of the
experimental group. This implies that the pre-service teachers who were taught Educational Psychology through MMLP have shown significant improvement in their achievement in Educational Psychology than the pre-service teachers who received instruction through traditional method.

ii) The group of pre-service teachers taught Educational Psychology through MMLP has shown significantly higher mean gain in achievement than the group of pre-service teachers taught Educational Psychology through traditional method.

iii) At the end of the experimental treatment, the group of pre-service teachers taught Educational Psychology through MMLP has scored significantly higher on the achievement test than the group of pre-service teachers taught through traditional method.

iv) From the opinionnaire it was found that most of the teacher educators were in favour of using multimedia learning package.

7.13 CONCLUSION

It may be safely concluded from the above findings that MMLP significantly improves the scores of pre-service teachers of the experimental group in their achievement, to establish that the Multimedia Learning Package Method of Educational Psychology learning proves more meaningful and effective than the Traditional Classroom Learning Strategy. The conclusion of the study needs also to be expressed in terms of their global importance for educational purposes vis-a-vis tested hypotheses of the study.

The retention of both the hypotheses of the study namely H1 - At the end of experimental treatment, the group of pre-service teachers taught Educational Psychology through MMLP (Multimedia Learning Package) scored significantly higher on the achievement test than the group of pre-service teachers taught through the traditional method.; H2 - At the end of experimental treatment, the group of pre-service teachers taught Educational Psychology through MMLP (Multimedia Learning Package) showed significantly higher gain score on the achievement test than the group of pre-service teachers taught through the traditional method.
7.14 EDUCATIONAL IMPLICATIONS

The present research clearly shows that changing from a traditional classroom to an innovative Multimedia equipped class, student's achievement does not diminish, rather it significantly improves. As compared to traditional instructional method, a positive effect on pre-service teacher's achievement in Educational Psychology was found, when taught using MMLPs, there to suggest the usefulness of MMLP for Teaching of Educational Psychology. The finding of present study can be beneficial for student, pre-service teachers, teachers teaching both in colleges and school, policy makers, planners and administrators.

- By this method knowledge of pre-service teachers improved.
- Multimedia learning package helps the teachers to make his/her teaching - learning process totally interactive.
- Multimedia creates more interest among the students than the traditional classroom method.
- This method keeps the pre-service teachers more active, alert and involved during the class hour.
- Teachers feel satisfied with their delivery of lesson.
- This method saves energy and time of the teacher as the teacher can easily repeat the same presentation if the teacher is teaching more then one section of the same class. Also the teacher can use it in various sections and time periods.
- Revision and recapitulation of concepts and main points is very convenient with this method.
- Pre-service teachers feel involved throughout and multi-sensorial approach makes learning more effective.
- Multimedia based learning can be used effectively even for larger group classroom teaching. It is easier for the teacher to monitor students in the class.
- Multimedia based learning suggests a new role for the teacher. A teacher, accustomed to being the sole source of information for teaching the passive learners in the classroom has to change, to be a facilitator in the learning process to actively encourage the student to learn in a more effective manner, participate in discussion, participate in making of MMLP and give textual, audio, video, graphical and
animation input for Multimedia Learning Package. So students feel being a part of the entire teaching learning process.

- Key points can be easily highlighted by the teacher through Multimedia Learning Package.
- It is possible to bring variety in the class-room teaching. Monotony created by traditional method gets broken.
- Class rooms become lively and positive learning atmosphere is created by multimedia.
- Multimedia Learning Package act as a source of Edutainment (Education + Entertainment) which helps in creating interest of the students and make the favourable attitude towards the subject.
- In this setting, students learn faster and often develop deeper understanding of the subject.
- Multimedia learning package is a good tool in the hands of students for Self-study and self-evaluation at their own pace.
- Multimedia Learning package helps in achieving the important skills such as creative thinking, critical analysis and the synthesis of knowledge.
- Multimedia Learning package has widespread use, which means good for all the levels and for all subjects. So it is globally applicable.
- Through this method elements of outer world can be brought into the four walls of the classroom in a very economical manner.

7.15 OVERVIEW
Multimedia based learning classes are abuzz with productive discussion and excitement of learning. The portrait of a different kind of classroom illustrates how multimedia based learning is much more effective than traditional classroom strategy. Multimedia Learning Package based learning can be the foundation for transforming education. MMLPs together with intelligent use of technology can create the kind of Digital-Age Education, our pre-service teachers deserve. Multimedia based learning redefines the boundaries of the classroom. No longer are pre-service teachers confined to learning within four walls with drab text books in
their hands. They get exposure to real world elements in form of audios, videos, graphics and animation. It gives the teachers capacity to bring in the outer world in a very economical manner. The teacher gets free from the shackles of dull and drab traditional method. On the basis of this work the investigator has outlined new research questions and an approach to the study of the development of Multimedia Learning Package combining perspectives from various other subjects, levels and groups of pre-service teachers. The findings suggest that multimedia can play a vital role in the field of education, so educationists need to develop more sophisticated understandings of the conditions, circumstances, means and mechanisms through which multimedia can be closely connected to education. It will hopefully lead to a new learning method that is more comprehensible, useful and engaging than the age longed traditional ‘Chalk and Talk’ method. Ultimately, the tools, techniques and methods evaluated in this work may help to create a new vision of what teachers can accomplish with multimedia in a variety of learning environments. It may lead to the development of multimedia based teaching pedagogies and curricula that are better able to meet the needs, interests and ambitions of a new generation of learners. Multimedia is taking baby steps in some arenas, giant steps in others, but it is clearly moving into all corners of education. It is unparalleled in its ability to deliver the concept; MMLPs will rule the Educational Psychology classrooms and teachers would be using it eventually.