

Chapter VI

Conclusions And Recommendations

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CONCLUSIONS AND RECOMMENDATIONS

VI.1 INTRODUCTION:

The purpose of the present study was to develop multimedia instructional system on Educational Technology for B.Ed. pupil-teachers and to see its effectiveness on the performance of the pupil-teachers. Multimedia technique was used to develop the instructional system and the system was tested experimentally. The different issues pertaining to the system approach, procedure and design of the study and analysis and interpretation of data have been discussed in the earlier chapters. It is; therefore, high time to discuss the results, draw conclusions and make suggestions based on the analysis of the data collected. This is done in the following paragraphs.

VI.2 DISCUSSION OF RESULTS AND CONCLUSIONS:

The present study was based on the same research hypothesis. Collecting data with the help of various tools tested the hypotheses. The data were analyzed and interpreted which was discussed in the chapter IV (data during the development of a system and tryout of a prototype) and chapter V (data after the experimentation of the system). The hypothesis are either accepted or rejected, the details are as follows.

The investigator collected the information about the present setting with the help of questionnaire and unstructured interviews to test the following research hypotheses (RH.1 and RH.2).

RH.1:

The present setting of teaching of Educational Technology in B.Ed. Colleges is unsatisfactory for better learning of the pupil-teachers.

RH.2:

An instructional system for Educational Technology instruction through multimedia technology can be planned, designed and constructed.

Following are the some of the results obtained from the responses of 50 teacher educators.

- Most of the respondents are from science faculty and all the 50 respondents are post graduates in education.
- More than one-third of the respondents have a teaching experience five to ten years, nearly one-thirds have teaching experience less than five years.
- The main suggestions about to use audio-visual aids by teacher-educators.
- The main difficulties faced by the teacher educators are lack of audio-visual aids and if available they are not in good condition.
- The main difficulty faced by the teacher-educator, ^{is that} there is no well-set Educational Technology lab having audio, visual and audio-visual aids.
- The respondent suggested the importance of audio, visual and audio-visual aids and also the use of multimedia technology in teaching of Educational Technology.
- They suggested that the charts, pictures, printed materials, video cassettes of demonstration lessons, audio cassettes, use of OHP, use of slide projector, use of computer and also use of multimedia technology can be produced for understanding of Educational Technology course.
- Most of the respondents are not using different teaching aids in their Educational Technology teaching regularly.

From the above results following are some of the conclusions.

Conclusion 1:

The research hypothesis no.1 is accepted. The present setting of teaching of Educational Technology in B.Ed. Colleges is unsatisfactory for better learning of the pupil-teachers.

Conclusion 2:

The research hypothesis no.2 is accepted. An instructional system for Educational Technology instruction through multimedia technology can be planned, designed and constructed.

The investigator collected the information through [?] to test the following research hypotheses (R.H.3 to R.H.6)

R.H.3:

- A) The male pupil-teachers and female pupil-teachers perform differently on achievement in their groups irrespective of the system used in instructing them.
- B) The male pupil-teachers perform differently on achievement irrespective of the system used in instructing them.
- C) The female pupil-teachers perform differently on achievement irrespective of the system used in instructing them.

R.H.4:

The conventional instructional system and the developed multimedia instructional system for Educational Technology Instruction differ in their effectiveness on the performance in achievement of the total pupil-teachers.

R.H.5:

- A) The male pupil-teachers and female pupil-teachers perform differently in retention of achievement in their groups irrespective of the system used in instructing them.
- B) The male pupil-teachers perform differently in retention of achievement irrespective of the system used in instructing them.
- C) The female pupil-teachers perform differently in retention of achievement irrespective of the system used in instructing them.

R.H.6:

The conventional instructional system and the developed instructional system for Educational Technology instruction differ in their effectiveness on the performance in the retention of achievement of the total pupil-teachers.

For the sake of experiment and for testing purpose the above four research hypotheses were stated into null form. Following were the null hypotheses of the study.

Ho.1:

There is no significant difference between the performance of the pupil-teachers from control and experimental group in pre test.

Ho.2:

There is no significant difference between the performance of the pupil-teachers from control and experimental group in post test.

Ho.3:

There is no significant difference between the performances of the pupil-teachers from control group in pre over post testing.

Ho.4:

There is no significant difference between the performances of the pupil-teachers from experimental group in pre over post testing.

Ho.5:

There is no significant difference between the gains in achievement in terms of scores in pre over post test of the pupil-teachers from control and experimental group.

Ho.6:

There is no significant difference between the performance of the pupil-teachers from control and experimental group in retention test.

The above null hypotheses were subdivided which were discussed in the Chapter V viz. Analysis and Interpretation of Data.

Following are some of the results obtained through experimentation.

- Male and female pupil-teachers from any group do not differ in their performance in the pre test. (Table V.3). The differences between the means of the female pupil-teachers (TableV.4), male pupil-teachers (Table V.5), total pupil-teacehrs (Table V.6), from control and experimental group were non-significant. Both the respective groups were equivalent in their achievements w.r.t. means in pretest.
- Male and female pupil-teachers from any group do not differ in their variability about the performance in the pre test. (Table V.7). The differences between the S.D.s of the female pupil-teachers (TableV.8), male pupil-teachers (Table V.9), total pupil-teachers (Table V.10), from control and experimental group were non-significant. Both the respective groups were equivalent in their achievements w.r.t. S.D.s in pretest.
- The data obtained in pre testing confirmed the equivalency of the control and experimental groups before going to a further treatment.

From the above results the null hypothesis Ho.1 is accepted.

Conclusion 3:

There is no significant difference between the performance of the pupil-teachers from control and experimental group in pre test.

- The analysis and interpretation of the data obtained in post testing indicate that the male and female pupil-teachers from control group are equally good in the performance in the post test (Table V.13).
- The male and female pupil-teachers from experimental group are also equally good in the performance in post test (Table V.13). There is no significant difference between the achievement of the male and female pupil-teachers from any group considered as isolate groups.
- When the mean performance in post test of the female pupil-teachers from control group was compared with the female pupil-teachers from experimental group the female pupil-teachers from experimental group significantly achieved more. (Table V.14). It is true with the

male pupil-teachers from the experimental group than in control group. (Table V.15). When the mean performance in post test of the total 24 pupil-teachers from control group was compared with the performance of the total 24 pupil-teachers from experimental group the experimental group significantly achieved more. (Table V.16).

- The differences between the S.D.s were found to be significant w.r.t. male and female pupil-teachers and also significant w.r.t. total pupil teachers which means that the treatments affected the performance in terms of S.D.s (Table V.17 to V.20).
- From the above results, **the null hypothesis Ho.2 is rejected** which means that the **Developed Multimedia Instructional System** helped the male, female and all 24 pupil-teachers in performing better than the pupil-teachers from control group.

Conclusion 4:

There is significant difference between the performance of the pupil-teachers from control and experimental group in post test. Developed Multimedia Instructional System helped the male, female and all 24 pupil-teachers in performing better than the male, female and all 24 pupil-teachers from the control group.

In order to understand 'How much they achieved?' the data was further analyzed and compare the differences between their performances on pre over pos test in their respective groups. The results are as follows:

- From the Tables V.22 to V.24 an V.28 to V.30, the analysis and interpretation of the data obtained in pre over post testing for the control group indicate that when then performance in pre and post test of the female pupil-teachers from control group was compared, the female pupil-teachers significantly achieved more in post test. Same is true with the male pupil-teachers form control group. When the performance in pre and post test of the total 24 pupil-teachers from control group was compared, the 24 pupil-teachers from control group significantly achieved more in post test.

- So the null hypothesis **Ho.3** is rejected which indicates that the **Conventional Instructional System** helped the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers from control group in performing better in pre over post test. The difference between the S.D.s were found to be significant for female, male and total pupil-teachers which means that the treatments affected the performances in terms of S.D.s for female, male and total pupil-teachers. Same is true in terms of mean differences for female, male and total pupil-teachers.

Conclusion 5:

There is significant difference between the performance of the pupil-teachers from control group in pre over post testing. **Conventional Instructional System** helped the male, female and all 24 pupil-teachers from control group in performing better pre over post test.

- From the Tables V.25 to V.27 and V.31 to V.33, the analysis and interpretation of the data obtained in pre over post testing for the experimental group indicate that when their performance in pre and post test of the female pupil-teachers from experimental group was compared, the female pupil-teachers significantly achieved more in post test. Same is true with the male pupil-teachers from experimental group. When the performance in pre and post test of the total 24 pupil-teachers from experimental group was compared, the 24 pupil-teachers from experimental group significantly achieved more in post test.
- So the null hypothesis **Ho.4** is rejected which indicates that the **Developed Multimedia Instructional System** helped the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers from experimental group in performing better in pre over post test. The difference between the mean differences were found to be significant for female, male and total pupil-teachers which means that the treatments affected in terms of mean differences. Same is true in terms of S.D.s.

Conclusion 6:

There is significant difference between the performances of the pupil-teachers from experimental group in post testing. **Developed Multimedia Instructional System** helped the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers from experimental group in performing better in pre over post test.

- The analysis and interpretation of the data obtained about gains in scores indicate that the female pupil-teachers and male pupil-teachers from control group are equally good in the performance in their groups. (Table V.40), the female pupil-teachers and male pupil-teachers from experimental group are also equally good in the performance (Table V.40). There is no significant difference between the achievement of the female pupil-teachers and male pupil-teachers from any group.
- When the performance of the female pupil-teachers from control group was compared with the female pupil-teachers from experimental group, the female pupil-teachers from experimental group significantly achieved more (Table V.41). The same is true with male pupil-teachers from the experimental group than in control group (Table V.42).
- When the performance of the total 24 pupil-teachers from control group was compared with the performance of the total 24 pupil-teachers from experimental group, the experimental group significantly achieved more (Table V.43).
- Hence the null hypothesis **Ho.5 is rejected** which indicates that the **Developed Multimedia Instructional System** helped the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers in performing and gaining better than female pupil-teachers, male pupil-teachers and all 24 pupil-teachers from the control group. The differences between the S.D.s were found to be significant which means that the treatments affected the performances terms of S.D.s.

Conclusion 7:

There is significant difference between the gains in achievement in terms of scores in pre over post test of the pupil-teachers from control and experimental group.

Developed Multimedia Instructional System helped the female pupil-teachers, male pupil-teachers and all 24 pupil teachers from experimental group in performing and gaining better than the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers from control group.

- The analysis and interpretation of the data obtained in retention indicate that the female pupil-teachers and male pupil-teachers from control group are equally good in the performance, the female pupil-teachers and male pupil-teachers from experimental group are also equally good in the performance in retention test (Table V.46). There is no significant difference between the achievement of the female pupil-teachers and male pupil-teachers from any group.
- When the performance of the female pupil-teachers from control group was compared with the female pupil-teachers from experimental group, the female pupil-teachers from experimental group significantly achieved more (Table V.48). The same is true with male pupil-teachers from the experimental group than in control group (Table V.49).
- When the performance of the total 24 pupil-teachers from control group was compared with the performance of the total 24 pupil-teachers from experimental group, the experimental group significantly achieved more (Table V.50).
- Hence **the null hypothesis Ho.6 is rejected**. It indicates that the **Developed Multimedia Instructional System** helped the female pupil-teachers, male pupil-teachers and all 24 pupil-teachers in performing and retaining better than pupil-teachers from control

group. The differences between the S.D.s were found to be significant which means that the treatments affected the performances terms of mean scores and also in terms of S.D.s.

Conclusion 8:

There is significant difference between the performance of the pupil-teachers from control and experimental group in retention test.

Developed Multimedia Instructional System helped the female pupil-teachers, male pupil-teachers and all 24 pupil teachers from experimental group in performing and retaining better than the pupil-teachers from control group.

VI.3 SOME RECOMMENDATIONS:

From the responses of the respondents and the experience in this study, following are some recommendations:

The teacher-educators should understand the concept of development of multimedia instructional system on Educational Technology.

- 1) The teacher-educator should have complete understanding of the subject Educational Technology. Without proper understanding of the subject one cannot explain multimedia technology approach.
- 2) The Educational Technology paper should be revised as per this study.
- 3) The teacher-educators and the pupil-teachers should develop multimedia instructional materials helpful in teaching of Educational Technology.
- 4) It is suggested that self learning material be developed on the lines as discussed in this study.
- 5) The Colleges of Education should rethink over the method they are teaching and following in their educational technology course. One has to develop steps and correlate the same with day to day lecture planning.

- 6) Multimedia Instructional System is the necessities of the Colleges of education. A joint effort in this direction will be highly appreciated.
- 7) The preparation of audio, visual and audio-visual teaching aids workshop should be part and parcel of Educational Technology paper.

VI.4 SUGGESTIONS FOR FURTHER RESEARCH:

While conducting the present research work, the researcher came across some problems that he feels needed further elaborate exploration thorough research. These problems were not directly related to the problem under investigation, and hence the investigator has not explored them any further. However, for the benefit of the researchers in this field as well as for the better understanding of the present research, the investigator has enumerated them here below.

- 1) The present research work was related to B.Ed. pupil-teachers. The investigator feels that studies related to B.P.Ed. Pupil-teachers and also higher education be conducted w.r.t. multimedia technology.
- 2) The investigator feels that such type of studies can be conducted in papers of B.Ed. other than Educational Technology.
- 3) The experimentation phase was done in College of Education, Barshi in the present study, the investigator feels that the developed multimedia instructional system may be implemented in various colleges of education on a large scale and the effectiveness of the system can be tested.
- 4) The investigator selected two units from educational technology course, he feels that the remaining three units can be covered and the system can be modified.
- 5) The investigator used compact disk multimedia instructional system in his study, he feels that other materials and media can be used and it will be a good problem for further study.

- 6) Different types of programs can be developed for teaching Educational Technology course to B.Ed. pupil-teachers.
- 7) The Educational Technology course of B.Ed. syllabus may be improved by involving multimedia technology and can be tested accordingly.