Abstract

An investigation was made to find out whether there is any significant difference between pre-attitude and post-attitude scores of the control and experimental group student-teachers. In the present study, the investigator has used experimental method. The tools used for study were E-content in Teaching of Mathematics Education and Attitude scale towards E-content in Teaching of Mathematics Education developed by the investigator. The result revealed that there is significant difference between the pre-attitude and post-attitude scales of the experimental group student-teachers.

I. INTRODUCTION

E-content is valuable to the students and also helpful to the teachers for all individual instruction systems; e-content is the latest method of instruction that has attracted more attention to gather with different concepts. The ultimate aim of the e-content is to abolish the disparity among the learners through effective education. E-content is facilitating to the teacher to an effective manner.

II. SIGNIFICANCE OF THE STUDY

E-content can greatly aid the process of mathematical exploration and clever use of such aids can help the student-teachers to understand various methods available in teaching
of mathematics education. Innovations like e-content and use of such material must be encouraged so that their use makes learning mathematics more enjoyable and meaningful.

The American Commission on Teacher Education (1944) says that “the quality of a nation depends upon the quality of its citizens; the quality of its citizens depends not exclusively but in critical measure, upon the quality of their education. The quality of their education depends more than any other single factor, upon the quality of their teachers.”

Therefore, the quality of the teacher depends on dedication and devotion of the teacher towards the subject of the knowledge and their attitude. As e-content enters into the field of education, it has taken the major role in education for the effective teaching–learning process. Hence, a favourable attitude towards e-content is very much needed for teachers as well as learners. The e-content have created a revolution in the content of education and in the nature of learning process. They have the capability of multiplying the human intellect beyond part conceptions and have tremendous implications for education. They have a great impact upon our educational system. The teachers should be in terms with the physical reality of the computers, and learn how to take actual advantage of the machines’ educational potential. For this, a favourable attitude towards e-content is essential for teachers. Hence with the intention of developing E-content and testing its efficiency on the attitude of student-teachers, the investigator conducted a study on “Influence of E-content in Teaching of Mathematics Education on Attitude of B.Ed. Student-Teachers”.

III. STATEMENT OF THE PROBLEM

“Influence of E-content in Teaching of Mathematics Education on Attitude of B.Ed. Student-Teachers”

IV. DEFINITION OF THE OPERATIONAL TERMS

- **Effectiveness**: According to Oxford Advanced Learner’s Dictionary of current English by A.S.Hornby (OUP, 1984) “Effective” means the power to bring about a result. As far as the study is concerned, effect refers to impressive results in the learning of Methods of Teaching Mathematics by the B.Ed students consequent upon the operation of E-content. The effectiveness is determined in terms of the gain scores obtained by the students in the experiment. The gain score is obtained by subtracting the pre-test score from the post-test score.

- **E-content**: Electronic content (E-content) or digital content is defined by those involved in creating, providing and distributing information as the digital content, which is viewed on screen and not on paper.

- **Attitude**: According to L.L. Thurston, “Attitude is the sum total of an individual’s inclination, feelings, prejudices or biases, preconceived notions, ideas, threats and convictions or beliefs about any specific object”

- **B.Ed. Student-Teachers**: B.Ed. Student-teachers refer to who are undergoing training for the profession of teaching (Bachelor of Education). In this study, B.Ed. Student-teachers refer to the student-teachers who belong to mathematics department.
V. OBJECTIVES OF THE STUDY
1) To find the significance of difference between the pre-attitude and post-attitude scores of the control group student-teachers.
2) To find the significance of difference between the pre-attitude and post-attitude scores of the experimental group student-teachers.

VI. METHOD ADOPTED FOR THE PRESENT STUDY
The investigator has used experimental method for the study.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-attitude scale</td>
<td>Pre-attitude scale</td>
</tr>
<tr>
<td>2</td>
<td>Convensional method</td>
<td>e-content presentation method</td>
</tr>
<tr>
<td>3</td>
<td>Post-attitude scale</td>
<td>Post-attitude scale</td>
</tr>
</tbody>
</table>

6.1 SAMPLE OF THE STUDY
The investigator has selected the sample as student-teachers of mathematics department of Alagappa University College of Education, Karaikudi and Sri Raaja Raajan College of Education, Karaikudi. From each of these colleges 30 student-teachers were selected to comprise the control group and experimental group of the study. These 30 student-teachers were selected using purposive sampling technique. The control group and the experimental group subjects were equated in all possible aspects and thus facilitating parallel groups of the experimental designing.

6.2 TOOLS USED FOR STUDY
1) E-content in Teaching of Mathematics Education developed by the investigator.
2) Attitude scale towards E-content in Teaching of Mathematics Education developed by the investigator.

6.3 STATISTICAL TECHNIQUES USED
The following statistical techniques were used:
1. Mean,
2. Standard Deviation
3. ‘t’ – test

VII. ANALYSIS OF DATA
Null Hypothesis – 1: There is no significant difference between the pre-attitude and post-attitude scales of the control group student-teachers.

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>SD</th>
<th>‘t’ value</th>
<th>df</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre attitude scores of the Control Group</td>
<td>30</td>
<td>60.15</td>
<td>16.06</td>
<td>0.71</td>
<td>58</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Post Attitude scores of the Control Group</td>
<td>30</td>
<td>60.14</td>
<td>16.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(At 0.01 level of significance the table value of ‘t’ is 2.576)
The mean of the Pre-attitude Scores of the Control Group is found to be 60.15. The mean of the Post-attitude Scores of the Control Group is found to be 60.14. Since the calculated ‘t’ value (0.71) is less than the table ‘t’ value, it is inferred from the above table that there is no significant difference between the pre-attitude and post-attitude scales of the control group student-teachers.

Figure 1: Comparison of Pre attitude & Post attitude scores of control group

Null Hypothesis – 2: There is no significant difference between the pre-attitude and post-attitude scales of the experimental group student-teachers.

Table 3: Mean and Standard Deviation and ‘t’ value of pre attitude and post attitude of Experimental group Student-teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>SD</th>
<th>‘t’ value</th>
<th>df</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre attitude scores of the Experimental group</td>
<td>30</td>
<td>59.31</td>
<td>18.65</td>
<td>10.99</td>
<td>58</td>
<td>Significant</td>
</tr>
<tr>
<td>Post Attitude scores of the Experimental group</td>
<td>30</td>
<td>90.30</td>
<td>7.90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(At 0.01 level of significance the table value of ‘t’ is 2.576)

The mean of the Pre-attitude Scores of the Experimental Group is found to be 59.31. The mean of the Post-attitude Scores of the Experimental Group is found to be 90.30. Since the
calculated ‘t’ value (10.99) is greater than the table ‘t’ value, it is inferred from the above table that there is significant difference between the pre-attitude and the post-attitude scales of the experimental group student-teachers.

**Figure 2: Comparison of Pre attitude and Post attitude scores of Experimental Group**

**VIII. FINDINGS**

1. There is no significant difference between the pre-attitude and post-attitude scales of the control group student-teachers.
2. There is significant difference between the pre-attitude and post-attitude scales of the experimental group student-teachers.

**IX. DISCUSSION**

The interesting derivation from the finding No. 1 and 2 is though the pre-attitude scores of the control group and the experimental group student-teachers towards e-content do not differ significantly, the post-attitude scores of the control group and the experimental group differ significantly. This establishes a significant effectiveness of e-content in enhancing the attitude to a favourable level of the student-teachers towards e-content. The familiarity with the e-content, the practical usage of e-content and the awareness of its benefits have developed more favourable attitude of the student-teachers towards e-content.

**William, B. Edward (2007)** compared the effectiveness of interactive multimedia CD-based learning with the conventional teaching method with the science group students.
The study clearly revealed that the interactive multimedia CD-based learning prepared by the teacher could show immense impact in the learning of physics. Further, the experimental group has expressed a more favourable attitude towards the interactive multimedia CD-based learning courseware.

**Rommel L. Verecio (2014)** conducted a study on Students’ Evaluation of an Interactive Multimedia Courseware. Findings of the study showed that the developed courseware facilitates and enhances the learning process in the classroom; arouses and maintains positive attitude of students toward learning the subject because of novelty of the materials used; and contributes consistent improvement in the ability to define and measure students’ attainment of educational goals. These results could encourage teachers and researchers in developing their own coursewares.

**X. RECOMMENDATIONS OF THE STUDY**

1. Lecture method in the class should be minimized and new technologies, such as; use of e-content and interactive multimedia courseware can be introduced.
2. The NCERT, SCERT, NCTE should introduce e-content in the form of curriculum development, to meet the challenges in education.
3. The teacher-educators and the student-teachers should be aware of the University Grant Commission’s Consortium for Educational Communication.
4. Adequate infrastructure may be established in the educational institutions at all levels for the development and usage of e-content.
5. The e-content can be prepared to other topics like micro-teaching, aims and objectives of teaching mathematics, various techniques of teaching mathematics and lesson plan, etc.
6. Since e-content is found effective among the student-teachers it may be effective to the students of school and college level.

**XI. CONCLUSION**

In the light of research findings, it has become crystal clear that Teaching of Mathematics Education through E-content has improved the attitude towards E-content in the Teaching of Mathematics Education. Besides, this trend indicates positive attitude of the student-teachers towards e-content as well as to use the e-content materials in their teaching-learning process as it paves the way for better results among the students. Therefore, as the educational system creates a comprehensive and collaborative learning climate, this research strongly advocates the use of e-content for the teaching of Mathematics Education among the B.Ed., student-teachers as well as for the teaching of other subjects in the class room both in colleges and schools is very useful and powerful.

**XII. REFERENCES**


TO CITE THIS PAPER