Research Paper Education

The Effect of Computer Based Instruction (CBI) On the Achievement in Zoology Among Pre-Service Teacher Trainees

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ABSTRACT

Globally, educational systems are under great pressure to adopt innovative methodologies and to integrate new Information and Communication Technologies in teaching and learning process, to prepare students with the knowledge and skills they need in the 21st century. Apparently, teaching profession is evolving from an emphasis on teacher -centred, lecture - based instructions to student – centred interactive learning environments. The present study aimed to find out the effect of CBI on the achievement of learning Zoology among teacher trainees. The sample consisted of 80 student teachers with 40 student teachers in the control group and experimental group respectively. The data were collected and analyzed with 't' and 'F' test. The findings revealed that there was a significant difference between the control group and experimental group in their mean score values.

Keywords : Education, Teaching and learning, CBI, and Achievement

1. INTRODUCTION

According to MHRD (2011), Education in India has always been a significant instrument for social and economic transformation. Educated and skilled population not only drives national / economic development but also ensures personal growth.

Teachers are therefore regarded as the custodians of the present as well as future. They prepare the citizens to shape the destiny of the country. They are therefore called the architects of the society and the makers of mankind. They are actually the backbone of the educational system.

NCFTE (2010) expected on the teacher education system through its initial and continuing professional development programmes, to supply adequate numbers of professionally competent teachers to run the nation's school.

2 Statement of the problem

E-learning can play a critical role in preparing a new generation of teachers, as well as upgrading the skills of the existing teaching force to use 21st century tools and pedagogies for learning. It would develop in pre-service a positive attitude towards e-learning and using computers in their future classrooms. Insight on these views the investigator has undertaken the present investigation is entitled as "THE Effect of COMPUTER BASED INSTRUCTION (CBI) ON THE ACHIEVEMENT IN ZOOLOGY AMONG PRE-SERVICE TEACHER TRAINEES".

3. NEED AND SIGNIFICANCE OF THE STUDY

Today's world is a computer world. Most important activities are computerized. Education in the digital world of today can actually make that meaningful shift by ensuring that if students do not learn the way they are taught, they can be taught the way they learn. This pedagogical shift, when integrated into educational software and appropriate technology, can make learning exciting and enjoyable while securing successful learning outcomes in shorter time frames.

There is a need to develop e-content learning material in structured form from the different theory papers of teacher – education programmes. Researchers also need to develop instructional material for remediation of deficiencies in language, science and social sciences for student – teachers and teachers especially at primary level, at the reason being that ; at primary level, the teachers are less educated and require more subject clarity **(Reddy, 2004).**

According to the **NCFTE (2010),** during the process of teaching and learning in teacher education for elementary stage, the existing transactional strategies marginally promote the capacity for independent study, self-discovery and joyful. The student teachers have to be trained for utilizing supplementary materials essential for accelerating and promoting learning among students. Teacher education must engage with theory to help trainees to view knowledge not as external to the learners but as something that is actively constructed during learning. Teacher education should integrate academic knowledge and professional learning into a meaningful whole.

According to the report of **MHRD (2012),** on the vision of the quality and regulatory perspective of Teacher education in India, current teacher education programmes pay more attention to the forms of the arrangements of courses rather than content. As a consequence, student teachers spend hours on decorating their lesson plans rather than reading and reflecting on what to teach, why and how?

Guidelines for implementation on restructuring and reorganization of the centrally sponsored scheme on teacher education **(2012) by MHRD** insisted to integrate ICT aided learning / integrating ICTs into subject teaching: Learning audio resources, video resources, animation movies etc. should be made widely accessible. Student teachers also need to learn how to access the www for resources, including principles governing quality, authenticity of resources; rules of fair use etc. Student teachers need to integrate ICTs into their subject teaching-learning using varied digital methods to create learning resources.

Insight on the above views and with the previous experience regarding the development of the e-content, the investigator has decided to conduct a study on student-teachers rather than on students. This study helps to develop sound subject knowledge, ability to relate to individual students, repertoire of teaching methods, self-management skills, organizational skills, classroom management skills, problem solving skills, team work skills and communication skills among student teachers.

4. OBJECTIVES OF THE STUDY

i. General Objectives

The following are the general objectives of the present study:

- To design and develop an e-content material on learning Zoology among teacher trainees.
- To find out the effect of an e-content material on learning Zoology among teacher trainees.

ii. Specific Objectives

The specific objectives of the present study are:

1. To find out whether there is any significant difference between control group and experimental group teacher trainees in their mean pre-test scores of learning Zoology.
2. To find out whether there is any significant difference between control group and experimental group teacher trainees in their mean post-test scores of learning Zoology.

5. HYPOTHESES OF THE PRESENT STUDY

Hypotheses are the tentative conclusions intended for verification. The following null hypotheses were framed by the investigator for the present study;

1. There is no significant difference between control and experimental group student teachers in their mean pre- test scores.
2. There is no significant difference between control and experimental group student teachers in their mean post test scores.

6. METHOD OF THE STUDY

The present study is the experimental method. To study the effectiveness of CBI on learning Zoology over text book learning, the investigator adopted the two groups, pre-test, post-test , control group and experimental design for the present study. One of the equivalent groups serves as the control group and the other as experimental group. The experimental factors are applied to the experimental group for a specific period of time. The difference is observed at the end of the period between the control and experimental group.

7. SAMPLE OF THE STUDY

For the present investigation, 80 student teachers from two different DIETS were selected to serve as control group and experimental group with 40 student teachers each, selected as samples based on their pre-test scores by purposive sampling technique.

8. VARIABLES OF THE STUDY

a. Independent Variable : Computer Based Instructional Material
b. Dependent Variables : Achievement in Post Test

9. TOOLS USED IN THE PRESENT STUDY

The following tools were used to collect the data.

- E-content learning material for E-learning developed and validated by the investigator.
- Achievement test questionnaires for pre test and post test.

10. STATISTICAL TECHNIQUES USED IN THE STUDY

The statistical techniques used to analyze the collected data are,

- Mean
- Standard Deviation
- "t" Test

11. DATA ANALYSIS

The collected data were analysed to test the framed hypotheses.

Hypothesis :1

There is no significant difference between control and experimental group student teachers in their mean pre test scores.

Table 1. Significant Difference between Control Group and Experimental Group Trainees in Their Pre Test

Group	N	Mean	Standard Deviation	"t" Value	Remarks at 0.05 Level
Control Group	40	11.925	1.385	0.245	Not Significant
Experimental Group	40	12.00	1.359		

The calculated "t" value 0.245 is lesser than the table value 1.684 with the degrees of freedom 78. So, the hypothesis is accepted. Hence, there is no significant difference between control and experimental group student teachers in their pre test scores**.** Hence, it can be concluded that both the groups are almost of the same initial academic ability.

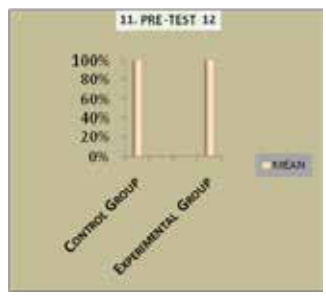

Fig.1 the Mean Difference between Control Group and Experimental Group Trainees in Their Pre-Test

Hypethesis :2

There is no significant difference between control and experimental group student teachers in their mean post test scores.

Table 2. Significant Difference between Control Group and Experimental Group Student Teachers in Their Post Test

Group	N	Mean	Standard Deviation	"t" Value	Remarks at 0.05 Level
Control Group	40	30.225	2.860	12.92	Significant
Experimental Group	40	38.550	2.900		

The calculated "t" value 12.92 is greater than the table value 1.684 with the degrees of freedom 78. So, the null hypothesis is rejected. Hence, there is a significant difference between control and experimental group student teachers in their mean post test scores of learning Zoology**.** It indicates, that achievement in the post test of experimental group is higher than the control group.

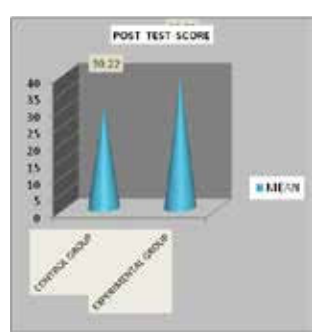

Fig -2. Shows the Mean Difference between Control Group and Experimental Group Trainees in Their Post Test Scores

12. FINDINGS OF THE STUDY

The following are the findings of the present study;

1. There is no significant difference between control and experimental group student teachers in their mean pre test scores. Hence, it can be concluded that both the groups

are almost of the same initial academic ability.

2. There is a significant difference between control and experimental group student teachers in their mean post test scores. It indicates that the achievement in the post test of experimental group is higher than the control group. This shows that CBI instructional material is an effective tool in learning Zoology.

13. EDUCATIONAL IMPLICATIONS

- Experimental group achieved more than control group in their post test. Hence, it is proved that CBI is a powerful and effective approach and can be adopted at all levels in education.
- Based on the result of the achievement in the post test. So, the present study reveals that the trainees should be trained to browse on Internet in collecting the images and videos for their effective e-content development.
- Science teaching teachers should have knowledge on selecting proper instructional strategy for the given topic.

14. CONCLUSION

Student teachers are involved in more than listening and reading. Their skills, analyzing capacity are developed by active learning. There is a need to re-articulate the potential of ICT in education. While ICT alone cannot be used to address issues in education, it can support efforts of capacity building and certification of teachers. Learning becomes vivid and best depending upon the teaching method the teacher selects.

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