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STATEMENT OF THE PROBLEM

OBJECTIVES

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RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

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EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING (TEL) IN LEARNING SCIENCE AT D.T.Ed. LEVEL

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ABSTRACT

The main objective of the study is to find out the effectiveness of technology enabled learning (TEL) in learning science at D.T.Ed level. The sample consists of 60 students of second year Teacher Training Programme (D.T.Ed.) in and around Chennai. The tool namely "Attitude of students towards technology in education" has been developed by the investigator used for collecting data. The major finding is that there is a significant difference between the students of control and experimental group - exposed to Technology based learning.

KEYWORDS

D.T.Ed. Level, technology enabled learning (TEL).

INTRODUCTION

ducation and technology are two key elements having an important role in human's life. The aim of education is to help the people know and find themselves (Basaran, 1994) technology helps individuals to take advantages of its knowledge and skills more effectively and efficiently. Technology is the discipline which consists of gathering machine, process, method, system, management, control system and bridges between science and applications. (Alkan, 1998). Education systems are changing at a great speed and the technology is changing rapidly. Older technology is replaced by new technological phenomena and the new ones are being adopted and these are affecting the education systems. Technology can refer to material objects of use to humanity, such as machines or hardware, but it can also encompass broader themes, including systems, methods of organizations, and techniques. Some modern tools include but are not limited to overhead projectors, laptop, computers.

Technology based learning are being widely adopted and have become an integral part of teaching and learning in teacher education system to realign quality education. Technology is growing rapidly and gaining more supports within the educational community. The richness, flexibility, offers valuable support to the approach of teaching-learning. Technology as powerful as the way it is used. The techniques of technology are adopted in various formats to enhance the process of teaching-learning. Correct usage of resources enables the elements of success to be planted within the students teachers of today and beyond. The education should believe empowered to change the world all the way through our student's teachers that is through our teaching roles in the classroom. These days, the teaching should really be facilitating and the classroom could very well be both the physical and virtual classrooms. The student teachers prefer their instructors to move away from traditional ways to more inventive, active and technology based learning approaches.

NEED FOR THE STUDY

Today, many countries around the world use some form of technologies in education. Most of the technological devices and programmes, are structured around the need of the teacher and are employed as teaching aids in the classroom. Hence, it is needed to study the effectiveness of some selected technological input in learning science at teacher training programme.

Educational technology is the result of the impact of scientific and technological development during the present century. Thus use of such technology in the instructions will motivate the teaching student teachers community and create better learning conditions. The outcome of this study will throw more light on the use of technology based instruction at teacher training programme level in teaching science.

OBJECTIVES

The following are the major objectives of the study:

- 1. To find out the effectiveness of technology enabled learning (TEL) in learning science at D.T.Ed Level.
- 2. To find out the student teacher's attitude towards using the TEL at D.T.Ed. Level.

RESEARCH DESIGN

Research design determines what statistic techniques should be employed. The present study involves the application of an experimental factor (Technology Enabled Learning) to a group of individuals in such a way that certain changes in the outcome can be determined.

This design was tested with the following experimental procedure,

$$\frac{R_{1}A \times_{b} c}{R_{2}A \times_{a} c}$$

Where,

 R_1 and R_2 = The sample chosen of the experimental and control groups.

A = Pre-test measure of the performance in Science.
C = Post-test measure of the performance in Science.

Xa = Technology enabled learning is used to teach the basic principles of science
 Xb = Text based self study is used to teach the basic principles of science

DELIMITATIONS OF THE STUDY

This study intends to find out only the effectiveness of some selected technological inputs in learning science in teacher training programmes. All technological inputs are not considered.

- In the process of establishing the effectiveness of the technology based instruction; the technology based instruction was compared only with the traditional method of teaching.
- 3. The present study was confined to the Teacher Trainees of student teachers studying in 2nd year at the Teacher Training Institutions in and around Chennai. The sample was taken from Government and self-finance institution.

TOOL USED

The investigator used the tool on "Attitude of students towards Technology in Education". The tool prepared by investigator, were used to find out the level of the impact of technology based learning. It was designed on the five point scale. And also, this part deals with the construction of a test to assess pre-test and post-test achievement in science. Content validity, face validity was also established for the tool. Reliability of the technology based learning was established by using the split-half method. Statistical techniques like mean, SD, t-test were used properly.

ANALYSIS AND REPORT

HYPOTHESIS 1

There will be significant difference between control group and experimental group in the pre-test performance in Achievement in Science

TABLE 1.1: PERFORMANCE ON THE PRE-TEST BETWEEN CONTROL GROUP AND EXPERIMENTAL GROUP

	Group	Ν	Mean	SD	"t" value	Significance
	Control	30	27.35	4.38	0.72	NS
	Experimental	30	26.58	3.90	0.72	INS
df = 98 t (0.05) = 1.96						t (0.01) = 2.58

Report: There is no significant difference between control group and experimental group in the pre-test performance in Achievement in Science HYPOTHESIS 2

There exists no significant difference in the mean scores on the attitude towards using new technology among the students in terms of gender.

TABLE 1.2

Gender	N	Mean	SD	"t" value	Significance
Male	70	189.92	10.07	2.92	c
Female	70	184.64	11.37	2.92	3

Report: There exists significant difference in the mean scores on the attitude towards using new technology among the students in terms of gender. **HYPOTHESIS 3**

There exists no significant difference in the mean scores on the attitude towards using new technology among the students in terms of locality of the institution.

TABLE 1.3

	Locality	2	Mean	SD	"t" value	Significance	l		
	Urban	62	191.61	11.68	1.66	NS	l		
	Rural	78	188.15	12.87	1.00	INS	l		
df = 98 t (0.05) = 1.96						t (0.01) = 2.5	8		

Report: There exists no significant difference in the mean scores on the attitude towards using new technology among the students in terms of locality of the institution.

HYPOTHESIS 4

There will be no significant difference between pre-test and post test performance of control group on the achievement in Science.

TABLE 1.4: PRE - TEST & POST - TEST PERFORMANCE OF CONTROL GROUP

Type of Test	N	Mean	SD	"t" value	Significance
Pre – test	30	27.35	4.38	1.41	NS
Post - test	30	29.06	5.00	1.41	INS
df = 98 t (0.05) = 1.96					t (0.01) = 2.58

Report: There is no significant difference between pre-test and post test performance of control group on the achievement in Science. **HYPOTHESIS 5**

There will be no significant difference between pre-test and post test performance of experimental group on the achievement in Science

TABLE 1.5: PRE - TEST & POST – TEST PERFORMANCE OF EXPERIMENTAL GROUP

	Type of Test	N	Mean	SD	"t" value	Significance	
	Pre – test	30	26.58	3.90	11.59	c	
	Post - test	30	39.67	4.83	11.59	3	
(df = 98		t (0.05) = 1.	.96		t (0.01) = 2.58	

Report: There is significant difference between pre-test and post test performance of experimental group on the achievement in Science. **Hypothesis 6**

There will be no significant difference between control group and experimental group in the post-test performance on the Achievement in Science

TABLE 1.6: POST - TEST PERFORMANCE BETWEEN CONTROL GROUP AND EXPERIMENTAL GROUP

Group	N	Mean	SD	"t" value	Significance
Control	30	29.06	5.00	8.32	c
Experimental	30	39.57	4.83	8.32	3
df = 98		t (0.05) = 1.	96		t (0.01) = 2.58

Report: There is significant difference between control group and experimental group in the post-test performance on the Achievement in Science HYPOTHESIS 7

There will be no significant difference between the post - test and retention test on the achievement in science by the Experimental group.

TABLE 1.7: POST - TEST AND RETENTION TEST - EXPERIMENTAL GROUP

• •	ADEL 1001 OUT TEST AIRS RETEINTION TEST EXILERINEENTAL GROUD							
	Test	N	Mean	SD	"t" value	Significance		
	Post-test	30	39.57	4.83	1.78	NS		
	Retention test	30	37.23	5.34	1.76	INS		
	df = 98	t	(0.05) = 1.9	96		t (0.01) = 2.58		

Report: There is no significant difference between the post - test and retention test on the achievement in science by the Experimental group.

MAJOR FINDINGS

A. ATTITUDE TOWARDS USING NEW TECHNOLOGY

- 1. There exists significant difference in the mean scores on the attitude towards using new technology among the D.T.Ed students in terms of gender.
- 2. There exists no significant difference in the mean scores on the attitude towards using new technology among the students in terms of locality of the institution

B. IMPACT OF USING NEW TECHNOLOGY IN LEARNING SCIENCE AMONG D.T.ED STUDENTS

- 1. There is no significant difference between control group and experimental group in the pre-test performance in Achievement in Science.
- 2. There is no significant difference between pre-test and post test performance of control group on the achievement in Science.
- 3. There is significant difference between pre-test and post test performance of experimental group on the achievement in Science.
- 4. There is significant difference between control group and experimental group in the post-test performance on the Achievement in Science
- 5. There is no significant difference between the post test and retention test on the achievement in science by the Experimental group.

IMPLICATIONS OF THE STUDY

The result of the study has indicated that introduction on the use of new technology was beneficial in enhancing the achievement in the science subject. The use of new technology shall be very much helpful in accelerating the learning rate of slow learners, if the D.T.Ed trainees get themselves acquainted in technology, it would bring about a overall change in the class room teaching situation.

CONCLUSION

Technology based learning skills are important for teaching professions, it's crucial for teachers. Technology provides a new mythology for teaching and learning. The smart classroom puts more responsibility ot students' and gives them greater inputs in the process of learning, which allows more creative and independent learning. The development of technology is placing new demands on expertise and also it is leading to the increasing use of technology in teaching and learning. Mass media, electronic media, CD, PowerPoint etc. promotes cognitive as well as the affective development on the students they, transmit knowledge very economically and interestingly. Therefore, we can use telecommunication and networking technologies in education to enhance teaching and learning across the nation and the world. Hence this technique should be incorporated among the teacher training students.

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