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Effect of Technological Use in Teaching-Learning Process on B.Ed Pupil- Teachers'

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Abstract: *Information and communication technology have a significant role in building the new global economy and causing fast societal changes. New ICT technologies have significantly transformed people's lives during the last decade. The current era is the age of technology, and technology plays an important part in our everyday life. The present study tries to investigate the effect of technological use in the teaching-learning process on the pupil-teachers' of B. Ed institutions. The investigation carried out to find the signifcance difference among urban and rural B.Ed pupil-teachers; male and female B.Ed pupil-teachers' and science education and social sciences B.Ed pupil-teachers'.*

IndexTerms –Effect, Technology, Use, B.Ed pupil-teachers'

1. INTRODUCTION

ICTs have altered the nature of employment and the skills required in the majority of areas and professions. While they have produced a wide range of new employment, many of which did not exist even five years ago, they have also replaced the necessity for many sorts of unskilled or low-skilled labour. For example, new'smart' agricultural equipment, which employs advanced digital and industrial technologies, may do tasks traditionally performed by a huge number of unskilled farm labourers. Furthermore, modern industrial units require fewer low-skilled personnel. These changes provide significant difficulties to educational institutions in terms of preparing students with the information and abilities required to flourish in a new and dynamic world of constant technological change and accelerating growth in knowledge production.

ICTs (information and communication technologies) play a significant role in building the new global economy and causing fast societal changes. To enjoy the full benefits of ICTs in learning, pre-service and in-service teachers must have fundamental ICT skills and abilities. Teacher education institutions and programmes must provide leadership for pre-service and in-service teachers, as well as model innovative pedagogies and learning technologies. They must also give leadership in assessing how new technology might be best utilised in the context of their country's culture, needs, and economic realities. To achieve these objectives, teacher education institutions must collaborate closely and effectively with school teachers and administrators, national or state educational authorities, teacher unions, corporate and community organisations, politicians, and other educational stakeholders. Teacher education institutions must also establish strategies and plans to improve the teaching-learning process within their courses and ensure that all future teachers are properly equipped to use the new learning technologies. According to the UNESCO World Education Report, Teachers and Teaching in a Changing World (UNESCO, 1998), the young generation is entering a world in which everything is changing, including scientific and technical, political, economic, social, and cultural factors. The rise of the 'knowledge-based' society is altering the global economy as well as the standing of education. Policymakers, business leaders, and educators are increasingly aware that the educational system designed to prepare students for an agrarian or

industrially-based economy will not provide students with the knowledge and skills they will need to thrive in the knowledge-based economy and society of the twenty-first century.

Education is at the crossroads of powerful and fast altering educational, technical, and political factors that will influence the structure of educational institutions worldwide for the rest of the century. Many nations are making attempts to modify the teaching/learning process in order to better prepare students for a society focused on information and technology. According to the UNESCO World Education Report (1998), new technologies challenge old concepts of both teaching and learning and have the potential to revolutionise teaching and learning processes by reconfiguring how instructors and learners obtain access to knowledge. ICTs provide a variety of strong tools that can aid in the transformation of today's isolated, teacher-centered, text-bound classrooms into rich, student-focused, interactive knowledge environments. To tackle these problems, schools must embrace new technology and learn how to use new ICT tools. They must also work towards the objective of changing the traditional learning paradigm. To achieve this goal, a shift in the traditional view of the learning process is required, as well as an understanding of how new digital technologies can create new learning environments in which students are engaged learners, capable of taking greater responsibility for their own learning and knowledge construction.

2. REVIEW OF RELATED LITERATURE

Ullah, Alam, Shan-A-Alahi, Rahman, Masum, and Akter (2019) carried out a research to assess the impact of ICT on students' academic performance, and their findings show that there is a link between ICT use and academic achievement among pupils. Furthermore, a student's addiction to ICT has a significant influence on academic progress.

Fernándeza and Mediavillab (2021) did research on the link between Information and Communication Technologies (ICT) and academic performance: a multilevel analysis for Spain, and their findings indicate that ICT has a negative influence on students' academic performance.

Ishaq, Shah, Muqaddar, & Tufail (2021), founded that ICT has a considerable influence on student motivation but has no remarkable effect on student academic achievement.

3. OBJECTIVE

1. To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to urban and rural
2. To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to male and female
3. To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to science education and social sciences

4. HYPOTHESES

H_0 (1): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to urban and rural

H_0 (2): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to male and female

H_0 (3): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to science education and social sciences

5. DELIMITATIONS OF THE STUDY

i. The study is delimited to only Meghalaya.

ii. The study is delimited to only B.Ed pupil-teachers'.

iii. The study is delimited to variables such as urban and rural; male and female; science education and social sciences.

6. METHODOLOGY

Methodology plays a crucial role in any research work. It helps the researcher to carry out the research in a systematic manner.

6.1 Method

The researcher used Descriptive cum normative survey method for the present study.

6.1Population

The population of the study consists of 465 B.Ed pupil-teachers' of Teacher Education Institutions in Meghalaya

Table 1: Population of Secondary Teacher Education Institutions and Secondary school stage pupil- teachers'

Sl. No.	Name of College	No. of pupil-teachers enrolled in 2020-22 & 2021-23
1	St. Mary Teacher Education, Shillong	98
2	PGT	98
3	USTM	182
4	RIE	87
Total		465

6.2 Sample of the study

The researcher used random sampling technique to draw out the sample from the population.

Table 2: Sample of Secondary Teacher Education Institutions and Secondary school stage pupil- teachers'

Sl. No.	Name of College	No. of Sample taken
1	St. Mary Teacher Education, Shillong	59
2	PGT	59
3	USTM	109
4	RIE	53
Total		280

6.3 Tool used in the study

The researcher keeping in view Likert Scale has developed an scale to measure the effect of use of technological means on B.ed pupil-teachers'. The individuals needs to choose responses to specifics statements by choosing from the option Never, Rarely, Sometimes, Often and Always respectively. The scale consists of all positive statements and the weightage was given keeping in mind the statements as 1,2,3,4,5 to Never, Rarely, Sometimes, Often and Always respectively. The reliability was the scale was found out to be 0.93 using Microsoft Excel 2007.

6.4 Statistical tools

For data analysis various statistical techniques depending on the nature of the data. Such as mean, standard division, t-test was used.

7. RESULTS AND DISCUSSION

Objective 1: To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to urban and rural

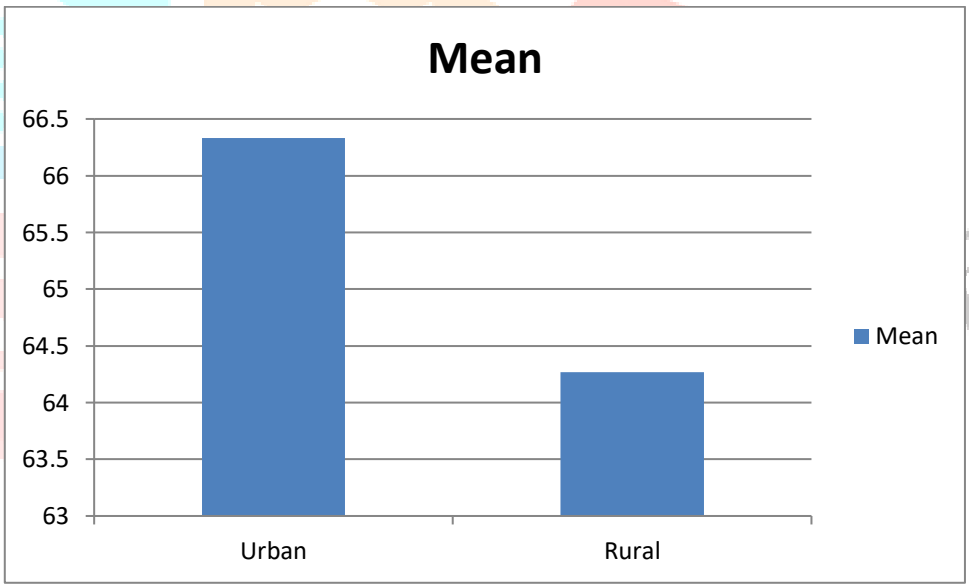
H_0 (1): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to urban and rural

Table 3: Locality-wise N, Mean (M), standard deviation (SD), t-value on use of Technology among secondary stage pupil-teachers'

Location	N	Mean	Std. Deviation	Std. error mean	df	t-value	Level of significance at 0.05
Urban	140	66.33	15.72	1.77	278	1.16	Not Significant (NS)
Rural	140	64.27	13.79				

df=278, 0.05=1.96, 0.01=2.58

Figure 1: Graphical representation of mean difference between the scores of urban and rural B.Ed pupil-teachers'



The above table 3 shows the mean and standard deviation for urban and rural B.Ed pupil-teachers' where total number of urban and rural B.Ed pupil-teachers' are 140 each. The mean score for both urban and rural B.Ed pupil-teachers' are 15.72 and 13.79 respectively. The computed 't'-value at df= 278 came out to be 1.16 at 0.05 level of significance, which is lower than that of the table 't'-value indicating that the computed 't'-value is not significant at 0.05 level of significance. Thus the null hypothesis there is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to urban and rural is retained. However, the table it is also evident that the mean score of urabn B.Ed pupil-teachers' is higher than that of the mean score of rural B.Ed pupil-teachers' which indicates that effect of technological use in teaching-learning process is more than for rural B.Ed pupil-teachers'. Figure 1 shows the graphical representation of mean score among urban and rural B.Ed pupil-teachers'. **Objective 2:** To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to male and female

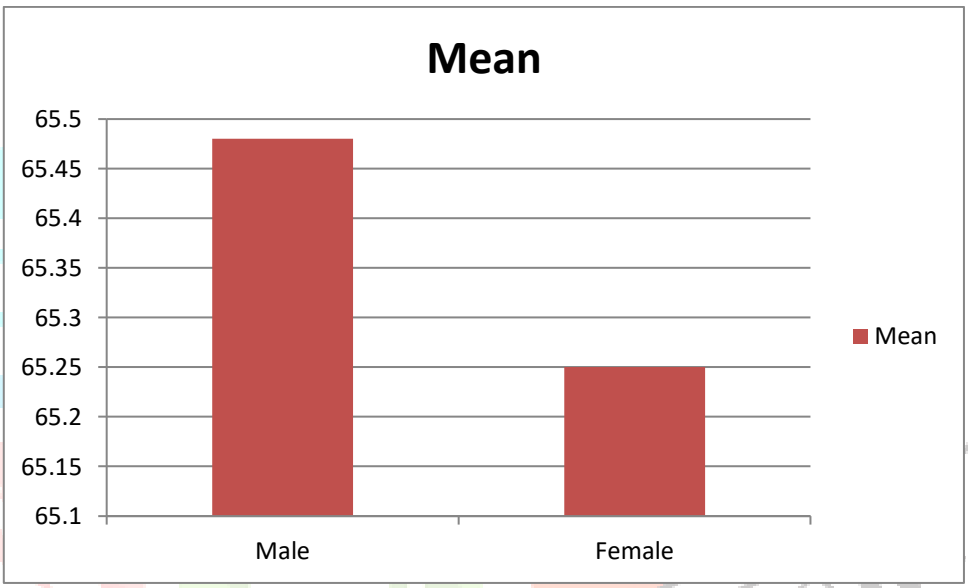
H_0 (2): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to male and female

Table 4: Gender-wise N, Mean (M), standard deviation (SD), t-value on use of technology among secondary school stage pupil-teachers'

Gender	N	Mean	Std. Deviation	Std. error mean	df	t-value	Level of significance at 0.05
Male	62	65.48	16.45	2.07	278	0.11	NS
Female	218	65.25	14.33				

df =278, 0.05=1.96, 0.01=2.58

Figure 2: Graphical representation of mean difference between the scores of male and rural B.Ed pupil-teachers'



The above table 4 shows the mean and standard deviation for male and female B.Ed pupil-teachers' where total number of urban and rural B.Ed pupil-teachers' are 62 and 218. The mean score for both male and female B.Ed pupil-teachers' are 65.48 and 65.25 respectively. The computed 't'-value at df= 278 came out to be 0.11 at 0.05 level of significance, which is lower than that of the table 't'-value indicating that the computed 't'-value is not significant at 0.05 level of significance. Thus the null hypothesis there is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to male and female is retained. Also, the table shows that the mean score of male B.Ed pupil-teachers' and mean score of female B.Ed pupil-teachers' are almost same which indicates that effect of technological use in teaching-learning process is more or less same for male as well as for female B.Ed pupil-teachers'. Figure 2 shows the graphical representation of mean score among male and female B.Ed pupil-teachers'.

Objective 3: To find out the difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to science education and social sciences

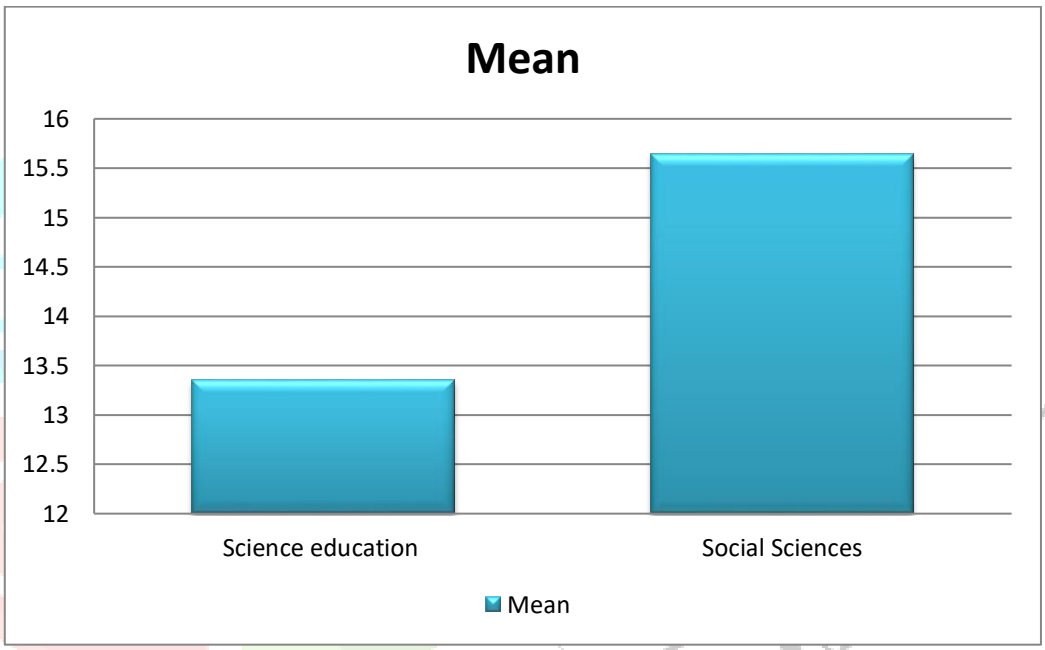
H_0 (3): There is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to science education and social sciences

Table 5:Stream-wise N, Mean (M), standard deviation (SD), t-value on use of technological practices among secondary school stage pupil-teachers'

Stream	N	Mean	Std. Deviation	Std. error mean	df	t-value	Level of significance at 0.05
Science education	118	63.42	13.36	1.5	278	2.16	Significant
Social Sciences	162	66.67	15.65				

df =278, 0.05=1.96, 0.01=2.58

Figure 3: Graphical representation of mean difference s between score of science education and social sciences B.Ed pupil-teachers'



The above table 5 shows the mean and standard deviation for science education and social sciences B.Ed pupil-teachers' where total number of urban and rural B.Ed pupil-teachers' are 118 and 162. The mean score for both science education and social sciences B.Ed pupil-teachers' are 63.42 and 66.47 respectively. The computed 't'-value at df= 278 came out to be 2.16 at 0.05 level of significance, which is higher than that of the table 't'-value indicating that the computed 't'-value is significant at 0.05 level of significance. Thus the null hypothesis there is no significant difference between the mean scores of effect of use of technological practices among the secondary stage pupil-teachers' in Meghalaya with respect to science education and social sciences is rejected. Also, from the table it can be seen that the mean score of science education B.Ed pupil-teachers' is lower than that of and mean score of social sciences B.Ed pupil-teachers' which indicates that effect of technological use in teaching-learning process is more among the B.Ed pupil-teachers' belonging to social sciences stream than that of B.Ed pupil- teachers' belonging to science education stream.

8. Conclusion

ICT aids in the professional development of teachers and students participating in teacher education courses. It may be included into the learning process to expedite the acquisition of knowledge and skills. ICT allows instructors to have access to materials that allow them to put their newly acquired knowledge and skills to use. Communication technology will be able to enhance teacher and teacher educator capacity while also strengthening teacher educator capacity, which is a key necessity of effective transactional approach. Finally, the power of ICTs will be defined by instructors' capacity to employ new learning tools to create rich, fresh, and interesting learning environments for their pupils. The present study revealed that there is no significant difference when it comes to effect of technology among the B.Ed pupil-teachers' in relation to their urban and rural location and male and female, however, when it comes to stream of study it is significant.

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