

INFLUENCE OF TECHNOLOGY ON THE EDUCATORS' CLASSROOM TEACHING: EVIDENCES FROM THE +2 SCHOOLS OF MEGHALAYA

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ABSTRACT

This article is the outcome of an evaluative study on the influence of technology towards the +2 educators. The study was undertaken in the state of Meghalaya focusing + 2 educators belonging to different streams - Arts, Science and Commerce. Altogether 500 +2 educators of Meghalaya were targeted and requested for participation, out of which around 417 respondents were finalised for final analysis on the basis of data adequacy testing. The educators who participated in the research were divided into three zones according to the types of school they were employed. Zones were divided into three sections- Garo Hills, Khasi Hills and Jaintia Hills, the three hill districts of Meghalaya. The selected types of school were segregated into four categories- Govt. School, Deficit School, Adhoc and Private schools. Educators from all the three categories were selected applying simple random sampling technique. Criteria for selection of respective schools was based on minimum 5 years of existence from the day of its establishment. A semi structured questionnaire was provided to the educators in order to understand the level of influence of technology over their classroom teachings in their daily school life. The research study tested three hypotheses. The findings revealed that there was no significant impact of technology over educators in their classroom teachings on the basis of school types or streams they undertake. The study also highlighted the influence of technology on educators' class room teachings on the basis of gender. The article discusses the findings and makes some recommendations.

KEYWORDS: Stream, School Types-Government, Deficit, Adhoc and Private

INTRODUCTION

The word "Technology Integration" may perhaps be considered as one of the most burning topics of the hour in today's world. Though most of the educators know its importance and its applicability to students' learning, likewise educators also know how to integrate it into the present system of classroom teaching. However, a lot of arguments and obstacles are always cropping up from time to time when it comes to the real implementation stage. Keeping in view the fast changing world in the field of imparting education and in order to keep pace with advanced technology, some kind of technology exposure should be initiated from the school level for the students in order to understand the presence of technology in the form of technology integration in the classroom teaching. This is more applicable for those schools which are situated in remote areas.

Many renowned scholars had suggested that the integration of technology is a must in the field of education in order to motivate the students for self learning and for better understanding. Integration of technology has become the most

important aspect for imparting education to the students in a very successful way. Its importance has motivated my renown researchers to examine and explore different aspects of such integration (e.g., Anderson & Maninger, 2007; ChanLin et al., 2006; Bauer & Kenton, 2005; Judson, 2006; Totter et al., 2006; Kotrlík & Redmann, 2005; Zhao, 2007; Gulbahar, 2007; Abbit & Klett, 2007). This is because it allows students to learn more in less time and allows schools to focus on global learning environments if used appropriately. In addition, it could be an effective teaching tool when used to engage all students in the learning process (Almekhlafi, 2006a, 2006b).

In today's world, technology cannot be ruled out only as a helping tool for study related to any courses. In fact, it is one of the subjects which need to be included in order to integrate into our daily teaching and learning process, which reflects or has immense influence the way we lead our lives in our society whether locally or globally. Meanwhile, the word technology has been appropriated, in both the popular imagination and in most educational circles, by those who identify it solely with computers. There are some who define the term even more narrowly. For example, the Chairman of the Federal Reserve Board identified technology education with learning to navigate the Internet (Crutsinger, 2000). Of course, a computer is an example of technology, but there are other tools which qualify the term 'technology'.

An effort has been made by the researcher to study the impact of technology in +2 schools in the state of Meghalaya, India. Educators of +2 schools in Meghalaya have been taken into consideration for this study to understand the influence of technology in their classroom teachings. Even though Meghalaya is a small state, predominantly dominated by tribal populace with a population of 3.211 million (Census of India, 2011). The citizens live in an interconnected manner with the presence of technology influencing their daily life directly or indirectly. The learning process in the schools of Meghalaya is very much similar with the other parts of the world with the fast information sharing being available with the help of technology.

Different ecosystem exists in Meghalaya as the dynamic and unpredictable environment. Integration of the technology in Meghalaya has become the need of the hour as there is still a huge gap between the urban and rural schools offering +2 courses, in local term, it is coined as higher secondary courses, under the division of Arts stream, Science Stream and commerce streams. Even though the need of each stream is different in integrating educational technology in the state, the time has come to upgrade the way we teach and the way we learn.

Basic Statistics of Meghalaya in +2 Schools and their Performances

By 2016, Meghalaya had 314 number of schools offering +2 courses in different branches. These schools are categorized as government schools, deficit schools, adhoc grant in aid schools and purely private schools. Meghalaya comprises of eleven districts, out of the 314 schools, almost half of the schools do not possess the proper infrastructure and experienced teachers to share the idea of knowledge. Integration of technology has become the integral part of the education system in Meghalaya, as the information sharing is required to make the students aware of the present world and its inventions and discoveries. However, most of the educators have the notion that technology in education entails to the internet connection which totally contradicts the sole purpose of the technology integration.

Challenges always crop up for integrating technology in classroom teachings in parts of the world. New ideas are always considered crazy and are scared of most of the people. Technology in the field of education is often considered a threat rather than a boon for the teaching community, as a lot of new things are required to be learnt and discovered.

Introduction of new ideas always encounter a lot of criticism and a numerous challenges. Likewise, integration of technology faces a lot of challenges in order to make it a complete success in +2 schools of Meghalaya.

Some of the challenges as found out during information collection stage are summarized as follows:

- Lack of infrastructure
- Lack of training
- Lack of motivation

Research shows that there are increasing number of computers being used at home and an increasing number of technological devices available to schools (Goddard, 2002). Research documented teachers' use of computers for different purposes and objectives (e.g., Guha, 2000; Yildirim, 2000; Rowand, 2000). Some teachers use computers for instructional purposes while others use them for both personal and instructional goals. An attempt has been made by the researcher to explore the impact of technology in the classroom teaching, in +2 schools, regardless of the fact that numerous challenges need to be borne during the integration of technology. In other words, it can be summerised that the whole idea of the research is to find out the degree of influence of technology on the educators of +2 schools of Meghalaya which may directly result in the integration of technology in the classroom teaching.

REVIEW OF LITERATURE

Life of today's society is totally based on the idea of technology where ever and whenever possible. The need of the survival does not only stick with food, house and cloth but also include technology. The largest of these changes is the prevalence and the inventions of technology in today's society, moving toward faster and larger scale transactions, leaving behind traditional life as we know it. Teaching has become incredibly more complex over the past few years and the science of teaching, the spread of information technologies and the challenge of adapting instruction to the needs and learning styles of students have widened the dimension of teaching and learning atmosphere. Technology use in education is becoming an increasingly important part of higher and professional education (Wernet, Olliges & Delicath, 2000; Almekhlafi, 2006a, 2006b). Technology not only gives learners the opportunity to control their own learning process, but also provides them with ready access to a vast amount of information over which the teacher has no control (Lam & Lawrence, 2002).

Hodas (1993) described that when facing change due to the implication of the introduction of technology, the culture of an organization is often the impeding factor in the success of the change. Again, (Bennett, 2003) opines, "what is important is how the technology is being integrated with the instructional program." Considering the same, there are greater implications that technology has on schools a better understanding of change and the educator is paramount which place a pivotal role in imparting education for any level or standard.

Dockstader (1999) indicated that integrating technology in the classroom is a complex process that includes some of the important factors which plays an important role in the successful integration in the classroom teaching. They are as follows.

- Learning the technology,
- Using technology in the teaching and learning process, and

- Integrating technology to enhance student learning.

Any tools to be used needs to be learnt in detail before the actual usage in the field of any kind. There's a saying, "A blind man cannot show the way to another blind person". The use of technology in classroom teaching is not only to learn with technology, but to enhance the teaching and learning process of the education system.

Sherritt & Basom (1996) in their report and analysis, said schools were becoming ineffective in preparing students for life and work because the requirements of a successful life and work conditions changed. Schools did a good job of educating students for an industrial age, but not for the information age. The fact about their finding is true, as there is no exposure to the ongoing technological changes in the field of education. As a result, students will become as a raw material for the industries, but in today's world education along with the information about everything is very much crucial for the successful life.

Keeping in mind the review findings, the present study intended to explore how much technology has influenced the educators of +2 schools in Meghalaya in their daily classroom teachings.

Previous result findings, e, g., Dockstader (1999), talks about the three factors of technology integration that involves – learning technology, using technology and integrating technology. The idea may perhaps be same with the state of Meghalaya, but some factors might not be applicable in all the cases. The present study attempts to bridge the gaps of the previous studies which were undertaken in other parts of the world under different conditions.

STATEMENT OF THE PROBLEM

As a state like Meghalaya, where the idea of technology integration is a brand new idea in the field of + 2 education. In the light of it, teachers/educators definitely need to play a pivotal role in the integration of technology in the classroom teaching. This is more so as all sundries in the organization will not be interested or well aware of the value and difficulty in integration of technology. No exposure to the ongoing technological changes in the field of education will render students as raw materials for the industries, but in today's world education along with the information about everything is very much crucial for the successful life.

SIGNIFICANCE OF THE STUDY

Education in the +2 schools of Meghalaya are being delivered to students at par with the rest of the states of the country. The +2 schools in Meghalaya impart education in three streams i.e. Arts, Science and Commerce. Scant literature and research studies are available specific to influence of technology in classroom teachings in the state of Meghalaya. The research study seeks to look into how educators have been influenced by the presence of technology in their classroom teaching and whether the influence of technology is limited to streams or types of schools they are employed in. Therefore, the study was designed in the first place to measure and analyse the influence of technology on educators in their classroom teachings in the +2 schools of Meghalaya. The study also explores possible relations between the influence of technology with its relative steam and type of schools. The findings of the study are expected to throw useful light in understanding the technology integration by educators in the +2 schools. This will help in formulating the strategy of digital education which has been prioritized by the government as one of the tools for development.

METHODOLOGY

Population

In Meghalaya, there were altogether 262 schools as of March 2016.

These schools were divided into the category as government schools, deficit schools, adhoc grant in aid schools and purely private schools offering +2 courses in Arts, Science and Commerce streams. For the study, the schools located in different areas were divided into three major zones – Garo Hills, Khasi Hills and Jaintia Hills zones.

Table 1: Population Size of +2 Schools

Streams	School Types				
	Govt	Deficit	Adhoc	Private	Total
Arts	22	27	102	11	162
Science	9	10	30	6	55
Commerce	2	11	30	2	45
				Total	262

Source: MBOSE, 2016

The population for school types of 262 were derived at keeping five years of existence as on March 2016. The +2 schools from each of the categories of government schools, deficit schools, adhoc grant in aid schools and purely private schools were selected from the streams of Arts, Science and Commerce as evidence from Table 1.

Sample Size Estimation for +2 Educators

Table 2: Sample Size Estimation for Schools

Streams	School Types				
	Govt	Deficit	Adhoc	Private	Total
Arts	4	5	20	2	31
Science	2	2	6	1	11
Commerce	2	2	6	2	12
Total	8	9	32	5	54

Source: Own Compilation

Towards sample size estimation for schools in Table 2 above, approximately 20 percent of +2 schools from each of the categories, viz., Government schools, deficit schools, adhoc grant in aid schools and purely private schools were selected from the streams of Arts, Science and Commerce. The schools were shortlisted on the basis of permission availed from the respective school authorities for conducting the study. 34 schools formed the sample size. However, schools from Commerce stream selected from Govt and Private were restricted to two (2) only. Around 8 educators irrespective of gender were targeted for each of the school types from the background of Arts, Science and Commerce from the +2 schools.

Sampling Technique

On the basis of simple random sampling technique with proportional allocation, around 432 educators formed the total sample size for the study from 54 +2 schools.

A total of 425 educators showed willingness to participate in the study. However, out of these, only 417 completed usable questionnaire was taken for final analysis.

Research Instruments and Method of Data Collection

Semi-structured questionnaire was developed and distributed to the target respondents. The questionnaire asked to be filled with complete anonymity so as to avoid educators' presenting artificial behavior. The educators were assured that the completed questionnaires shall be kept confidential, which triggered filling of complete information on the part of the educators. Care was taken to collect questionnaire on the site of the schools in order to give the educators a chance to consider their responses in the present situation in which they are working.

Hypotheses Framed

Three hypotheses were tested in the present study. First two hypotheses were tested applying single factor ANOVA. While the third hypothesis was tested via Two Factor ANOVA of independent variables to check their relationship with each other. The null hypotheses were rejected or not rejected, depended on whether the calculated F ratio was significant of the probability level of 0.05 (or 5%).

RESULTS AND DISCUSSION

H₀₁: There is no significant difference in the influence of technology in an educators' class room teaching belonging to the stream of Arts, Science and Commerce.

Descriptive

Table 3: Stream –Arts, Science and Commerce

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Technology_Influence	Arts	230	26.56	7.932	.523	25.53	27.59	10	46
	Science	97	27.72	7.774	.789	26.15	29.29	14	44
	Commerce	90	30.53	5.334	.562	29.42	31.65	17	39
Total		417	27.69	7.558	.370	26.96	28.42	10	46

ANOVA

Table 4: Streams- Arts, Science and Commerce

		Sum of Squares	Df	Mean Square	F	Sig.
Technology_Influence	Between Groups	1020.940	2	510.470	9.293	.000
	Within Groups	22740.532	414	54.929		
	Total	23761.472	416			

Analysis for H₀₁

From the descriptive Table 3, we find that the average level of influence of technology is 27.69 derived from all the respondents from every streams taken together. This indicates that all the respondents are highly influenced by the present existing technology and they are well aware of the fact that presence of technological aids in the education will have a great impact on the education scenario. The average level of influence of technology in commerce stream is found to be the highest with average mean value of 30.53 (17 lowest rating and 39 highest rating on Likert's 5 point rating scale). Followed by the educators belong to Science stream with the average mean value of 27.72, (14 lowest rating and 44 highest rating on Likert's 5 point rating scale). The educators belonging to Arts stream have the lowest average mean with

the mean value of 26.56 (10 lowest rating and 46 highest rating on Likert's 5 point rating scale). Table 3 clearly indicates that educators belonging to Commerce streams are more influenced by the existing technology for the classroom teachings in +2 schools of Meghalaya.

From the ANOVA Table 4, the F value 9.293 and degree of freedom 2 with the corresponding p- value 0.000 is smaller than the level of significance 0.05.

Hence, we can reject the null hypothesis.

Findings

On the basis of analysis conducted for H0₁ after testing through One Way ANOVA, it was found that there is a significant impact of technology on the educators' classroom teaching in the +2 schools of Meghalaya irrespective of their subjects they teach in the classroom. The above mentioned hypothesis indicated that technology can influence educators in their classroom teachings irrespective of their subjects they are teaching.

H0₂: There is no significant influence of technology in educators' classroom teaching on the basis of types of school they are employed in.

Descriptive

Table 5: School Type- Govt., Deficit, Adhoc, Private

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Technology_Influence	Govt.	128	25.73	8.190	.724	24.29	27.16	10	46
	Deficit	91	28.32	8.076	.847	26.64	30.00	10	44
	Adhoc	129	28.07	6.340	.558	26.97	29.17	14	45
	Private	69	29.78	7.048	.848	28.09	31.48	13	45
	Total	417	27.69	7.558	.370	26.96	28.42	10	46

ANOVA

Table 6: School Type- Govt., Deficit, Adhoc, Private

		Sum of Squares	Df	Mean Square	F	Sig.
Technology_Influence	Between Groups	850.173	3	283.391	5.108	.002
	Within Groups	22911.299	413	55.475		
	Total	23761.472	416			

Analysis For H0₂(For School Types)

From the descriptive Table 5, we find that the average level of influence of technology is 27.69 derived from all the respondents from every stream, according to zones, but according to the different types of school the educators are presently employed. This result indicates that all the respondents are highly influenced by the present existing technology and they are well aware of the fact that presence of technological aids in the education will have a great impact on the education scenario as mentioned earlier no matter where are working. The average level of influence of technology by the educators working in private schools is found to be the highest with average mean value of 29.78 (13 lowest rating and 45 highest rating on Likert's 5 point rating scale). Followed by the educators employed in in the deficit schools with the average mean value of 28.32, (10 lowest rating and 44 highest rating on Likert's 5 point rating scale). The educators

belonging to Adhoc schools have the second lowest average mean with the mean value of 28.0 (14 lowest rating and 45 highest rating on Likert's 5 point rating scale). Surprisingly, the educators employed in the Govt. Schools have the lowest average mean value of 25.73 (10 lowest rating and 46 highest rating on Likert's 5 point rating scale). The reading from the table 4.5 clearly indicates that educators belonging to different types of schools are all influenced by the existing technology for the classroom teachings in +2 schools of Meghalaya, but all the educators working in private schools are well aware of the technology in the field of education.

From the ANOVA Table 6, the F value 5.108 and degree of freedom 3 with the corresponding p- value 0.002 is smaller than the level of significance 0.05.

Hence, we can reject the null hypothesis tested for the educators belonging to four different school types in Meghalaya state.

Findings

On the basis of analysis conducted for H_0_2 after testing through One Way ANOVA for the educators belonging to four different types of schools, it is found that there is a significant impact of technology on the educators in their classroom teaching in the +2 schools of Meghalaya irrespective of their schools where they teach.

H_0_3 : Technology has no significant influence on educators on account of stream and types of school they are employed in.

Descriptive

Table: 7 School Type and Stream

	Schol_category	STREAM	Mean	Std. Deviation	N
Technology_Influence	Govt.	Arts	25.07	8.787	73
		Science	24.64	7.372	36
		Commerce	30.32	5.697	19
		Total	25.73	8.190	128
	Deficit	Arts	25.66	8.371	53
		Science	32.17	6.438	24
		Commerce	31.79	5.366	14
		Total	28.32	8.076	91
	Adhoc	Arts	27.48	6.585	62
		Science	26.39	7.305	28
		Commerce	30.21	4.532	39
		Total	28.07	6.340	129
	Private	Arts	28.93	7.097	42
		Science	32.33	7.483	9
		Commerce	30.50	6.715	18
		Total	29.78	7.048	69
	Total	Arts	26.56	7.932	230
		Science	27.72	7.774	97
		Commerce	30.53	5.334	90
		Total	27.69	7.558	417

ANOVA -----Tests of Between-Subjects Effects

Table 8: School Type, Stream, School Type*Stream

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	technology_influence	2599.020(a)	11	236.275	4.522	.000
Intercept	technologg_influence	241596.280	1	241596.280	4623.589	.000
School_category	technology_influence	674.461	3	224.820	4.303	.005
STREAM	technology_influence	952.059	2	476.029	9.110	.000
Schol_category * STREAM	technology_influence	826.571	6	137.762	2.636	.016
Error	technology_influence	21162.453	405	52.253		
Total	technologg_influence	343450.000	417			
Corrected Total	technology_influence	23761.472	416			

Analysis of H0₃

From the descriptive Table 7, we find that the average level of educators being influenced by technology for the streams and school types is 27.69 as derived from all the respondents taken together. This indicates that the educators are highly influenced by the present existing technology usage and they are well aware of the fact that presence of technological aids in the education will have a great impact on the education scenario. The average level of influence of technology in commerce stream is found to be the highest with average mean value of 30.53 (Likert's 5 point rating scale). Followed by the educators from Science stream with the average mean value of 27.72, (on Likert's 5 point rating scale). The educators belonging to Arts stream have the lowest average mean with the mean value of 26.56 (Likert's 5 point rating scale). The reading from the *Table 7* clearly indicates that educators belonging to Commerce streams are more influenced by the existing technology for the classroom teachings in +2 schools of Meghalaya.

From the ANOVA Table 8, for the *school types and streams*, the value of 2.636 and the degree of freedom 6 with the corresponding *p-value 0.016* is smaller than the level of significance 0.05.

Hence, we can reject the null hypothesis.

Findings

On the basis of analysis conducted for H0₃ after testing through two way ANOVA for the educators belonging to four different types of schools and teaching in different streams , it is found that technology has a significant influence on the educators' classroom teaching in the +2 schools of Meghalaya. This is irrespective of their schools where they are employed and stream they are teaching. This finding is consistent with the findings of (Aquino, 1994; Lewis, 1990; Romiszowski, 1998). They found that ecuators generally have a favourable disposition toward the role of media in which media are used as instructional aids than the media as instructional systems. Similar results were acknowledged with the findings from earlier studies (Lampe & Chambers, 2001; Zepp 2005).

Their studies found that teachers had been significantly influenced by the presence of technology which are applicable for the classroom teaching purposes. Specifically, the proportion of educators' been influenced by the technology was 27.69%, which is more than the 50%. That the percentage for not being influenced by the technology was because of lack of knowledge about technology and modern use of media in the classroom teaching. Most educators were indifferent to it because they could not imagine how these media could be used without threatening the traditional role, or at best position of classroom teachers.

Genders were not taken into consideration in this study as technology influence can never be considered as male or female orientation. The effect of school type, stream and school type with stream was not considered as significant on the influence of technology over educators in their classroom teaching. This was evident after testing of hypothesis, one, two and three.

CONCLUSIONS

Eclecticism was evidenced in the findings of this study. In the first place, there was an effective influence of technology over educators for all the streams, though a little higher for the educators teaching in commerce stream. In the second place, the influence of technology was found out to be more in private schools may be perhaps the infrastructure in terms of higher technology than the other schools in four different categories. Thirdly, the study shows that the influence of technology does not depend wholly on the types of school they are employed and the subjects they teach according to the stream. Finally we can conclude that the educators in Meghalaya are always willing to accept the new technology which will aid them in their teaching for the benefit of the student community. The study may be summed up by the view as to teachers will not be replaced by technology, but teachers who don't use technology will be replaced by those who do.

LIMITATIONS

Confining the study to educators in the selected schools is likely to prevent the researcher from generalizing the findings of this study freely for the schools not included in the study. Another limitation has to do with the influence of technology in their teaching. Influence of technology is not only endpoints on a continuum to measure the integration of technology in the classroom teaching. There are other factors which might need to be considered for assessing the actual influence and usage of technology in the +2 schools of Meghalaya.

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