

Influence Of Information And Communication Technology (Ict) On The Practical Performance Of B.Ed. Students

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Abstract

One of the important aims of B.Ed. courses across the Universities and Colleges in the country is to train prospective teachers to develop skills in practical teaching. In the recent past a need was felt to enhance the course duration from one to two years with purpose to enable them not only a sound knowledge of theory but also prepare them for efficient and effective class room teaching. Revolution on Information and Communication Technology (ICT) has set-in a new challenges to traditional methods of teaching as ICT has reached to an echelon where traditional teaching might be replaced by the virtual application of advanced ICT usage. Numerous studies have been documented on the usage of ICT by the trainee students and its impact on their cognitive and psychological status but no study could be noticed on usage of ICT and Performance in their practical during their training. Present study is under taken on the randomly selected sample of 150 B. Ed. students from Ayodhya (Faizabad) District of U.P. with an aim to analyze the impact of usage of ICT on their practical Performances. An ICT Usage Scale (ICTUS) was developed and validated for the subject. Descriptive statistics were employed for the analysis. The result corroborates positive and significant effect of ICT on their practical Performances and class room teachings. Though Gender has no significant difference in usage of ICT but the students from urban and rural differed in their usage of ICT. The study is concluded with recommendations/ suggestions which may be useful for planning and practical approaches.

Keywords: Information and Communication Technology (ICT), Practical Performance, student teacher

Background

Teaching is a complex and psychological process. In the class room teaching, those

elements which create interest among the learners and provide assistance to the teacher are vital to be integrated during curriculum delivery. Use of Information and Communication Technology in the field of teaching and learning has not only made the class room activity very interesting but teachers feel very supportive to make the lesson very comprehensive. At the same time, there is requirement for the teachers to keep abreast the advanced technology in Education. Teachers' good ICT competence helps them to adopt new pedagogical practices and integrate ICT in a meaningful way (Liisa Ilomaki, 2008). The traditional way of teaching i.e. 'chalk & talk' method is losing its strength in the contemporary world when e-class rooms and modern technical paraphernalia have equipped the teachers and learners for the better and fast exploration. The present age of 21st century is the revolutionary time of Information Technology. Plethora of information is available on a subject on finger movement without restriction to time and space. The communication of knowledge and contents is no longer confined to four walls of a classroom; the entire contents are readily available to grasp through IT communication methods like Whatsapp, Face book, Twitter, Line, Wechat, LinkedIn etc. In addition to that designed software is facilitating our educational activities extremely well in almost every area. Programmed learning, active learning, collaborative learning, creative and evaluative learning etc are some of the techno based teaching and learning concepts which are highly worth supported and integrated by ICT. A prospective Teacher could perform better and can be trained in a more effective manner with appropriate usage of ICT. Use of ICT in personal and professional arena motivates to perform better for a teacher. The usage of ICT by a student teacher in a classroom not only works as teaching aids but also provide an interesting and attentive class room environment. It enriches subject contents and creates interest to learn to the students effectively. Deaney et.al. (2003) found that use of ICT in class room not only changes in working ambience and class room relations but also helpful in raised interest and increased motivation. However, the knowledge and skills of ICT affects teachers to use ICT in class room (Hassan et.al. 2016). Evidently, the use of ICT in teaching and learning has corroborated a positive impact as a whole but contribution of usage of ICT in the classroom performance by the B Ed student teachers particularly is though being interesting but have not been explored and noticed yet. The present study is undertaken to analyze the impact of ICT in classroom performance by the trainee students.

Information And Communication Technology (Ict)

The word information and communication Technology (ICT) has replaced Information Technology (IT). The term ICT encompasses a wider range of instruments and activities from simple communication devices to functioning of e-learning, the form and its use is highly versatile and ever changing. As per ICT Wikipedia "the concepts, methods and applications involved in ICT are constantly evolving on an almost daily basis" The role of ICT in Education has been substantiated with easy access of enriched contents from myriad sources and forms. There are three major sides of ICT i.e. communication and information, Science and Education. Advancement in ICT has brought a new era of information revolution where entire glob is connected on merely movements of fingers. In the field of education, ICT is enabling to access information worldwide, transact and retain it smartly and effectively by the teacher and learners. Smart class rooms, interactive board and accessibility of audio-visual contents have modernized and challenged the conventional method of teaching and learning. The application of ICT in teaching and learning is the demand of the hour, the accessibility of classroom education has been extended up to door steps as e-class and e-learning. Shrivastava (2016) substantiated that use of ICT sets an environment of student centered learning. Integration of ICT and its effective usage can enhance scholastic Performance. The usage of ICT involves our all the senses of knowledge, audio-visuals create immense interest among learners.

Significance Of The Study

Learning to gain competency for Practical class room teaching is a very vital part of the B Ed Course. Knowledge and skills in class room teaching is being given due importance in the training for the trainee students. There are many components which could probably be responsible to contribute for effective class room performance for a budding teacher. Usage of ICT in micro teaching by the trainee students could be highly efficacious. Despite the important role and contribution of ICT in classroom practical teaching sensed evenly but have not been studied and noticed yet. The present study was taken for the study of ICT factors in practical performance by the Student Teachers of B.Ed. course.

Practical Performance

One of the important aims of the teaching practices in a class room by the prospective student teachers is to develop confidence among them so that they could come out of the psychological barriers during their future full-fledged teaching in their profession of teaching. Use of ICT can improve their confidence and ability to transact the subject contents as a learner centered at own pace of learning. During the Micro teaching, trainee teachers learn the skills of class room teaching. Use of ICT in the Micro teaching class is highly efficacious to support them not only gain confidence but also it enriches contents and sustains interest among learners. Tata et. al. (2015) found Micro teaching practices are significantly related to practical performances. Guo (2006) studied the ICT literacy in teacher education programme and found that ICT competencies had increased significantly from beginning to end of the teacher education programme. The traditional teaching aids have become redundant with inception and availability of e-resources for the class room teaching. There is only requirement to explore these facilities and integrate the resources to the class room. Ghavifekr and Rosdy (2015) studied the increasing role of ICT in the class room teaching and found that ICT integration in class room has a great effectiveness in teaching and learning. For a student teacher in class room practice of teaching, it has become imperative to integrate and equipped with ICT for effective performance. The practical performance by the trainee teachers has got bearing upon their class activities. In the present study it is annotated that the practical performance does not merely includes a class room teaching but other associated activities such as lesson planning, preparing or selecting suitable teaching aids, receiving adequate feedback for the improvement and retention of desired achievements are also included under the practical performance.

Literature Review

Ha and Lee (2019) studied elementary teachers' perceptions of smart learning issues for analyzing and concluding effective teacher's programme. The adaption of smart class room teaching and learning has got positive impetus in the process. Teachers with child centered education and knowledge with high usage of ICT exhibited high level of positive opinion towards smart class room teaching. Jita (2018) explored pre-service teachers' opportunities to

learn to teach science with ICTs during teaching practice. 103 science pre-service teachers from mid-size university in South Africa responded on their usage of ICTs for the teaching, during their teaching practice. It was revealed that the programme provided uneven opportunities within group to learn. The study was concluded with implications as to how universities should structure teaching practice experience for equitable opportunities to learn (OTL) for the all pre-service teachers. There should be fair & equal opportunities for the usage of ICTs for pre-service teachers. Menon (2018) studied the impact of ICT on personality and values of B.Ed. students. A sample of 200 students was drawn randomly for the study. Mean, S.D. and Chi-square test were used for analyses. Social and political values found to be significantly different with respect to ICT awareness among B.Ed. students, whereas personality was not significantly associated to ICT awareness. A study of Awareness on e-resources among B.Ed. student teachers taken by Nithy and Malathi (2017) with sample of 200 B.Ed. students from three B.Ed., colleges in and around Palakkad District, no significant difference could be established in the awareness of e-resources and e- resource technology among the students. The gender, locality (Urban & Rural) and qualification were not the significant factors in the awareness of e-resources. Arthi & Tamilselvi (2016) studied attitude towards ICT among B.Ed. students on a random selected sample of 724 B.Ed. students, out of ten colleges of Education from Namakkal District. The study was carried out using S.D., mean and t-test for the analysis. Higher level of attitude for ICT was found in male than female students whereas other factors which were analyzed were marital status, locality (Urban & Rural). Unmarried found higher in attitudes than married whereas rural B.Ed. Students found better in ICT attitudes than Urban. No significant differences (at 0.05 levels) were established with respect to gender, marital status and locality. Gnanamuthu and Krishna Kumar (2015) studied anxiety of B Ed students' towards ICT. 600 trainee teachers were randomly selected from 12 colleges. For measuring attitudes,

a tool was developed by the researcher themselves. Female trainees were found more anxious towards ICT than male counterpart. There was no effect on ICT anxiety in relation to types of Institutions. It was implicated that ICT environment and exposure to it would be an effective way to overcome the anxiety. Thakur (2014) undertake a study on Awareness of Trained Teachers in relation of Information and Communication Technology. On a sample of 300 Trained Teachers of secondary school from three districts of WB, a self-made questionnaire was administered. The items were having categories; very poor, poor, average, good and very good. Using frequency, percentage, SD and t-test data were analyzed. Overall ICT awareness was found poor among the teachers. Urban and Rural trained teachers differed significant on their ICT awareness whereas gender was not having any effect on the Awareness. Chigonna,et.al. (2014) studied Educators' Motivation on Integration of ICTs into Pedagogy; case of disadvantaged areas. Under the investigation, Herzberg' Motivation Hygiene theory was taken into consideration for motivation to use ICT in teaching and learning. Randomly selected, disadvantaged group of schools located in western Cap were taken for the study. It was found that use of ICT in class room was having significant effect due to satisfaction derived from the use of the Technology in the class room and delivery of curriculum.

Objective

1. To study the usage of Information and Communication Technology (ICT) by B. Ed. Student Teachers.
2. To study the impetus of Information and Communication Technology (ICT) on the practical performance of B. Ed. Student Teachers.

Hypothesis

1. There is no significant difference in Practical Performances of B. Ed. Student Teachers using ICT at three level i.e. high average and low.
2. There is no significant difference in use of Information and Communication Technology (ICT) between urban and rural B. Ed. Student Teachers.
3. There is no significant difference in use of ICT between male and female B. Ed. Student Teachers.

4. There is no significant difference in use of ICT between Self Financed/ unaided Colleges and Govt Colleges B. Ed. Student Teachers.
5. There is no significant difference in Practical Performance between female and male B. Ed. Student Teachers.

Methodology

Descriptive method of statistical design was undertaken. Mean, S.D., ANOVA and t-test were employed for the analysis.

Sample

5 B.Ed. Colleges (2-urban and 3 rural) were selected randomly in Ayodhya (Faizabad) district of UP. Under urban area one Government and one Self-financed college were selected whereas one Government and two Self-financed college were taken under rural area for the study. The practical teaching marks scored by the student teachers in the final exam were taken under Performance scores. The details of the subject sample are as follows.

Table 1: Distribution of Sample

Students (Gender)	Urban			Rural			G. Total
	Self-Financed/ Un aided Colleges	Government Colleges	Total	Self-Financed/ Un aided Colleges	Government Colleges	Total	
Male	14	14	28	44	22	66	94
Female	6	6	12	29	15	44	56
Total	20	20	40	73	37	110	150

Tools used

To collect the data on usage of Information and Communication Technology by the B.Ed student Teachers, an ICT Usage Scale (ICTUS) was developed. The tool has got a total of 25 items with five points (Always, Often, Sometimes, Seldom and Never) options in each item. The test-retest and split half reliability were found 0.77 and 0.73 respectively. The content validity was established with the help of experts. The details of the items under given areas are as follows.

Table 2: Area wise Items of ICTUS

S.No	Areas	Items
1	Basic knowledge about ICT	5
2	Availability of ICT Equipments at College	5
3	Potency of its Usage at College	5
4	Availability of ICT Equipments at Home	5
5	Potency of its Usage at Home	5
	Total	25

Data collection

The data were collected using the ICT Usage Scale from the subjects. It takes around 30 minutes to record the responses. For the interpretation and scoring, numerical grading was awarded to each option (Always- 4, Often-3, Sometimes-2, Seldom-1 and Never-0). The final scores of practical of the trainee teachers obtained in their final exams were taken. The secured marks were converted out of 100 for the interpretation and analysis.

Analysis and Result

Data were analyzed using SPSS 20. The details of analysis under each hypothesis are as below:

H1: There is no significant difference in Practical Performances of B. Ed. Student Teachers using ICT at three levels i.e. high, average and low.

Table 3: ANOVA of Practical Performance on High, Average and Low of ICT usage

Variations	SS	df	Mean Square	F-value	sign
Between Groups	360.45	2	180.22	3.53	p<0.05
Within Groups	7498.15	147	51		
Total	7858.59	149			

In the above table, F-value is found significant even at less than 0.05 level. It was confirmed that there were significant differences in the Practical Performance of B. Ed. Student Teachers between their different levels of ICT usages. So the null hypothesis was rejected and alternate was accepted. Further, to find out the difference exactly among their levels, t-test was undertaken.

Table 4: Practical Performance between High and Average ICT users

Level	N	Mean	SD	SEM	df	t	sign
High	28	85.61	8.58	1.62	121	1.99	p<.05
Average	95	82.60	6.51	0.67			

From the above table, t-value is found significant at 0.05 level, it infers that high and average ICT users differ in their Practical Performances.

Table 5: Practical Performance between Average and Low ICT users

Level	N	Mean	SD	SEM	df	t	sign
Average	95	82.60	6.5	0.66	120	1.38	NS
Low	27	80.56	7.6	1.47			

t-value in the table 5 is Non-significant at 0.05 level. Therefore, those who use ICT average and those who use low do not differ in their Practical Performance.

Table 6: Practical Performance between High and Low ICT users

Level	N	Mean	SD	SEM	df	t	sign
High	28	85.61	8.58	1.62	53	2.3	p<.05
Low	27	80.56	7.66	1.47			

t-value in the table is noticed significant even at less than 0.05 level. It substantiates that Practical Performance between high and low users of ICT differ significantly.

H2: There is no significant difference in use of Information and Communication Technology (ICT) between urban and rural B. Ed. Student Teachers.

Table 7: Usage of ICT between Urban and Rural B. Ed. Student Teachers

School	N	Mean	SD	SEM	df	t	sign
Urban	40	74.23	14.44	2.28	148	4.19	p<0.01
Rural	110	61.03	17.91	1.7			

In the above table, t-value is significant at even less than 0.01 level. This indicates that urban and rural B. Ed. Student Teachers differ in usage of ICT at personal and professional front. Therefore the null hypothesis is rejected and alternate is accepted.

H3: There is no significant difference in use of ICT between male and female B. Ed. Student Teachers.

Table 8: t-test: Use of ICT by male and female B. Ed. Student Teachers

Gender	N	Mean	SD	SEM	df	t	sign
Male	94	64.15	18.67	1.93	148	-0.35	NS
Female	56	65.25	16.92	2.26			

t-value in the above table, found non-significant. It means that male B. Ed. Student Teachers and female B. Ed. Student Teachers have no difference in access and use of ICT devices significantly, thus the null hypothesis is retained.

H4: There is no significant difference in use of ICT between Self Financed/ unaided Colleges and Govt Colleges B. Ed. Student Teachers.

Table 9: t-test: Use of ICT by Self-Financed and Govt Colleges B. Ed. Student Teachers

Students	N	Mean	SD	SEM	df	t	sign
Self Financed/ unaided Colleges	93	64.92	16.11	1.67	148	0.328	NS
Govt Colleges	57	63.93	20.82	2.76			

t-value in the table-9, found non-significant. It means that B. Ed. Student Teachers of Self-Financed and B. Ed. Student Teachers of Government Colleges have no difference in access and use of ICT devices, thus the null hypothesis is retained.

H5: There is no significant difference in Practical Performance between female and male B. Ed. Student Teachers.

Table 10: t-test: Practical Performance between female and male B. Ed. Student Teachers

Students	N	Mean	SD	SEM	df	t	sign
Female	56	83.43	7.49	1.00	148	0.83	NS
Male	94	82.41	7.14	0.73			

t-value in the above table, found non-significant. It means that female B. Ed. Student Teachers and male B. Ed. Student Teachers have no difference in their Practical Performances, thus the null hypothesis is retained.

DISCUSSION

Practical knowledge of class room teaching is very vital part of training for the B Ed students. In fact it is a science as it needs to follow definite methods and principles to transact the contents effectively to the learners, it is an art and skill as the individual's neuro- muscular function, appropriate soft skills and coordination in class room creates interest and attraction among the taught and at the same time, it can be said that commerce part is also involved in the process as the number of productive hours, integration of many teaching and training aids with its optimum usage are unavoidable. Practical Performance in the class room is associated to numerous factors such as amount of subject knowledge, level of confidence, communication and other soft skills. Use of ICT in the class room is one of the defining factors to perform better as it works as a unique teaching aid which not only boosts the confidence of the trainee teacher but also creates interest among the learners by engaging them with their more number of senses. As the result has revealed that those Trainee teachers who use high ICT paraphernalia in home and class room and those who use low differ in their performance in the practical teachings significantly, however, at other levels i.e. average and low and high and average have no significant impact in their Practical achievements. Evidently as revealed, B Ed student teachers hailing from urban and rural areas found at variation in the usage of ICT in the class room and home. Whereas the access and use of ICT based upon gender is not supported as the discrimination is no longer is in practice in the contemporary society in general. Student Teachers from Private/unaided and Government Colleges have no significant difference in use of ICT as these colleges have no specific variations in such facilities, as normally noticed, trainee students also join private and government colleges equally from all socio-economic backgrounds. Most interesting conclusion; male and female students have equal ability to score practical competence and performance in class room teaching during their B Ed course, which is not dictated by gender.

SUGGESTIONS

1. The B Ed trainees are to be equipped with necessary knowledge and ability to handle with Information and Communication Technology in the class room prospective.
2. Minimum bare infrastructure to be finalized for the class room and micro teaching and the same to be adhered by the college management/administration like smart class room, PC, micro phone with uninterrupted broadband internet facilities.
3. Special attention to be given to those trainee students who are from rural back ground,

There is an urgent need to bridge the digital divide in urban and rural by extending the facilities in rural areas at par.

4. Modern information and communication technologies in the field of education are ever changing, the trainers and trainees both are equally required to keep abreast about the progress.

CONCLUSION

The conclusion drawn from the study supports the positive effect of ICT in the practical performance of trainee students during B Ed course. Out of the above analysis, following are concluded.

1. Usage of ICT in the class room micro teaching or at home has got a significant effect on the Practical Performance of B Ed trainee students.
2. Between different levels, high & average, average & low and high & low of ICT usage, only average & low level users do not differed in their Practical Performances significantly.
3. There is an effect of locality on the usage of ICT, Urban student teachers found to be significantly high users of ICT at class room practice classes and at personal level than rural trainee teachers.
4. Gender is not found a variable to determine either the use of ICT or difference in Practical Performances.

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