

Effectiveness of Mobile Phone Usage in Pre-Service Teachers Training Programme on Development of Elementary Teacher Competency

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ABSTRACT

The study was conducted on mobile phone usage in the Teacher Training Institute for the development of Teachers' competency. The experimental method was adopted for the present study. A sample of 100 D.El.Ed students of one DIET were selected using the purposive sampling technique. The information schedule, questionnaire, interview schedule and pre-test & post-test were developed for the present study. The analysis of data has been made through percentage and mean analysis. The major findings of the study include (i) there is a positive effect of mobile usage on the development of teachers' competency. There is a significant difference between male and female pre-service teachers of DIET teacher students in their mobile phone usage and enhancement of teachers' competency.

Keywords: Effectiveness, Mobile Phone usage, Teachers' Competency, D.El.Ed students teachers.

Journal of Teacher Education and Research (2024). DOI: 10.36268/JTER/19206

INTRODUCTION

Today we live in an era of Information and Communication Technology (ICT). The 21st century is the revolutionary age of mobile communication technology. Adults are largely adopters of new technologies that is why most of the students and teachers have their own mobile phones. Mobile technology opens various ways for new educational technologies aimed at fulfilling the country's educational needs. Currently it is greatly evident in the way of teaching and learning. Nowadays, smartphones have become a part of every person's life. Educational technology plays significant roles in the creation and dissemination of knowledge in several ways through computers, mobile phones etc. Mobile phones act as catalysts for fostering mobile learning. They are transforming traditional classroom based teaching and learning into smart learning. A mobile phone is a portable telephone device that does not require the use of landlines. It is a device that can make and receive telephone calls over a radio link while moving around a wide geographical area. It does so by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network due to the revolution of mobile technology. Mobiles not only become a simple communication device but also a future device. Modern mobiles support various advanced features like modern computer and also support a wide variety of other services. In general by mobile device we mean Personal Digital Assistants (PDAs), digital cell phone, smart phone, notebooks or tablet that can be used for some of formal or informal learning anywhere at any time. There are various ways to use mobile for recording lectures, reading e-books, providing feedback, accessing internet, multimedia materials, and practical exercises and using software for enhanced learning.

Mobile phones are the means through which learners' access vital information from the internet. Sharing ideas, teamwork and collaboration is becoming easier and simplified with these devices. According to Martin, Diaz, Plaza, Ruiz, Castro and Peire (2011) the proliferation of mobile phones has now turned them into important tools to complement both formal and informal

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How to cite this article: Roul, K., Mishra, T. (2024). Effectiveness of Mobile Phone Usage in Pre-Service Teachers Training Programme on Development of Elementary Teacher Competency. *Journal of Teacher Education and Research*, 19(2):35-40.

Source of support: Nil

Conflict of interest: None

learning. The exponential increase in the use of mobile phones has been accompanied by a growing interest in the educational benefits and applications they offer (Botha & Cronje, 2007). Mobile devices now support learning anywhere and anytime, support social learning and knowledge sharing, Gloria, Adele & Olalekan (2012), asserted that mobile learning is accessible at any time and any place to support performance. Mobile learning users can interact with educational resources when away from their normal place of learning (Wang et al, 2009).

According to NCETE (2009), the Pre-service teachers' education specific objectives are:

- To enable the prospective teachers to understand the nature, purpose and philosophy of teacher education.
- To develop among teachers an understanding of psychology of their pupils.
- To enable them to understand the process of socialization.
- To equip them to acquire competencies relevant to pedagogy, curriculum development, its transaction and evaluation.
- To enable them to foster creative thinking among pupils for reconstruction of knowledge.
- To enable them to make pedagogical analysis of the subject they are to teach at the second stage.
- To acquaint them with educational needs of specific groups of pupils.
- To enable them to utilize community resources as educational inputs.

- To develop communication skills and use then modern information technology.
- To develop aesthetic sensibilities.
- To acquaint them with research in education including action research.

Rationale of the study

Today, technology of education is being developed with the aim of not only making education more widely available but also for improving the quality of the teaching which is already available. Use of e-learning can make it interesting and learner oriented. The present study has its importance because in the traditional method of teaching various content subject at elementary school level, student acquires knowledge or information with partially no opportunity to develop understanding, application and skills. The traditional method also fails to draw the total attention of the learner towards learning in various content area of skills and abilities of the teachers. The study develops the maximum cognitive, affective and psychomotor abilities of the students' teachers. To maintain standard or quality in teaching learning process, teacher should make use of mobile learning. Mobile usage in teaching learning process will help to develop recreational activities during classroom transaction. So the investigator has selected the research problem.

Statement of the problem

Effectiveness of Mobile usage in Pre-service Teachers training programme on development of Teachers competency

Objectives of the study

- To find out the level of mobile phone usage of D.El. Ed students teachers in pre-service teachers' training programme.
- To find out the effect of mobile phone usage in pre-service teachers training programme on development of teachers competency.
- To find out the significant difference between male and female students teachers in their mobile phone usage.

Hypothesis

- There is no significant level of mobile phone usage of D.El.Ed students' teachers in pre-service teachers training programme.
- There is no significant relationship between mobile phone usage and development of teachers' competency of pre-service teachers.
- There is no significant difference between male and female students teacher in their mobile phone usage.

Scope an Delimitation of the study

- Bhadrak district & Keonjhar district included
- Two Teachers Training Institute (TTI)
- 160 student teachers from two DIET & Govt. ETEI
- Mobile phone usage in Pre-service training programme.
- Experimental method
- Pre-test/Post-test
- Development of teachers competency

Definition of keywords

Mobile Phone usage

A mobile phone is a wireless handheld device that allows users to make calls and send the massages, among other features. Way of

utilizing the mobile phone in daily life as well as for educational benefits is called as mobile phone usage. It means that mobile phone utilization for his/her daily routine life and pedagogical opportunities of mobile phone.

Teacher Competency refers to the abilities and knowledge that enables on teacher excel academically to contribute for individual and organizational performance in pedagogical, research and curriculum expertise.

METHODOLOGY

Experimental two group design i.e. Control group and experimental group.

Sample and sampling technique

Bhadrak and Keonjhar district have been selected for the study. Bhadrak district is a non-tribal districts and Keonkhar district is a tribal district. Two Teachers Training Institution (TTI) have been selected for the study. One TTI is DIET, Bhadrak, Agarpada and other TTI is Govt. ETEI, Fakirpur. Out of total students teachers 160 have been selected i.e. 80 from each TTI. Besides the sample has also included Principal, Teacher Educators. The random sampling procedure was followed.

Tools used

- Pre-Test/Post-Test
- Questionnaire for Principal
- Interview Schedule for Students
- Interview Schedule for Teacher Educators

DATA ANALYSIS

The collected data has been analysed with the help of Percentage, mean value.

Analysis and Interpretation of the data

The Table 1 shows the level of mobile of phone usage in Teacher Education institution. The analysis of the table reveals that about 50% and 40.11% opined that the mobile phone usages were high and moderate respectively. Hence it further highlights that most of the pupil teachers Teacher Training Institution were used mobile phone in effective manner. The result of the study has given in graphical Figure 1.

The Table 2 indicates the process of mobile phone usage in pre-service teachers training programme on T.T.I. The Figure 2 bar graphs confirms the status of mobile phone usage is good, manageable and poor in 56.88%, 32.5% and 10.62% of pre-service Elementary teachers of Teacher Training Institution. It is further revealed that most of the students were used their mobile phone for development of their competency for better teacher in future. The Table 3 represents that Opinion of Teacher Training Institute Teaching staffs on mobile phone usages. The analysis of the above

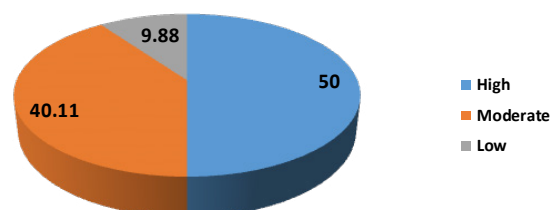


Figure 1: Mobile phone usage in T.T.I



Table 1: Level of mobile phone usage in Teacher Training Institution

Sl. No.	Ways to use mobile phone	No. of respondents			Total
		High	Moderate	Low	
1	Internet access	106 (61.63)	52 (30.23)	14 (8.14)	172 (100.00)
2	Social networking	118 (68.6)	38 (22.09)	16 (9.30)	172 (100.00)
3	Basic communications	113 (65.69)	47 (27.32)	12 (6.97)	172 (100.00)
4	Mobile apps	116 (67.44)	43 (83.13)	13 (7.55)	172 (100.00)
5	MMC storage	121 (70.34)	36 (20.93)	15 (8.72)	172 (100.00)
6	Download educational e-books, videos and audios from various websites	101 (58.72)	47 (27.32)	24 (13.95)	172 (100.00)
7	Organise seminar, workshops and conferences through mobile	117 (68.02)	39 (22.67)	16 (9.30)	172 (100.00)
8	Capture images, charts diagrams, voice recorder, e-books, maps	104 (60.46)	54 (31.39)	14 (8.13)	172 (100.00)
9	Provide free internet facilities to pre-service teachers	80 (46.51)	70 (40.69)	22 (12.79)	172 (100.00)
10	Organise regular orientation to pre-service teachers on mobile phone usage in development teacher competency	80 (46.51)	68 (39.53)	24 (13.95)	172 (100.00)
Mean Value		86 (50.00)	69 (40.11)	17 (9.88)	172 (100.00)

Table 2: Process of mobile phone usage in pre-service teachers training programme

Sl. No.	Particulars	No. of respondents			Total
		Good	Manageable	Poor	
1	Way of utilizing the mobile phone in daily life and for pedagogical opportunities	90 (56.25)	52 (32.50)	18 (11.25)	160 (100.00)
2	To collect information in pedagogical and content area	89 (55.53)	51 (31.87)	20 (12.50)	160 (100.00)
3	Develop teacher competency on teaching competency through video class transaction	86 (53.75)	55 (34.37)	19 (11.88)	160 (100.00)
4	Use of ICT room for better use of mobile phone for effective teacher	84 (52.50)	61 (38.12)	15 (9.38)	160 (100.00)
5	Mobile phone usage for unit test and achievement test	89 (55.62)	53 (33.13)	18 (11.25)	160 (100.00)
6	Use mobile phone for preparing assignment and project work	92 (57.50)	54 (33.75)	14 (8.75)	160 (100.00)
7	Preparing action research, seminar paper and discussion point	88 (55.00)	56 (35.00)	16 (10.00)	160 (100.00)
8	Doubt clearing through phone call and message	95 (59.38)	51 (31.87)	14 (8.75)	160 (100.00)
9	Use mobile phone for effective organisation of co-curricular activities	98 (61.25)	46 (28.75)	16 (10.00)	160 (100.00)
10	Downloading various matter for acquiring information and technical guidance	99 (61.88)	39 (24.37)	22 (13.75)	160 (100.00)
Mean Value		91 (56.88)	52 (32.5)	17 (10.62)	160 (100.00)

Table 3: Opinion of Teacher Training Institute Teaching staffs on mobile phone usages

Sl. No.	Indicators	No. of respondents said yes out of 172	Percentage
1	Effective use of internet access become the best resource of knowledge for teacher & learners.	124	72.09
2	It can access many educational websites which help us to provide information	134	77.91
3	It can also help to download educational e-book, videos & audios	131	76.16
4	Student teachers can use feedback, You Tube, Whatsapp for learning purposes	128	74.42
5	Students teacher can make educational web pages and group, download learning content	136	79.07
6	Student teacher can use voice calling, video calling, individual and group calling to community with community members	139	80.81
7	It helps to attend seminar, conference and workshops	133	77.32
8	Many mobile phone applications which help teachers and students in teaching learning process	130	75.58
9	It can help teacher for capturing video, images, charts, diagrams, lectures, e-dictionary and toy & play video.	139	80.81
10	Memory cards help teacher to download and save various type of educational video clips, audio clips, images, charts, map & e-book for effective learning	146	84.88
Mean Value		134	77.91

Table 4: Comparison between Pre-test score of Control & experimental group with respect to use of mobile phone

Sl. No.	Type of Group	Number	Mean	Difference
1	Control group	80	8.61	1.84 (Minor difference)
2	Experimental group	80	10.45	

Table 5: Comparison between Post-test score of Control & experimental group with respect to use of mobile phone

Sl. No.	Type of Group	Number	Mean	Difference
1	Control group	80	12.82	11.53 (Major difference)
2	Experimental group	80	24.35	



Figure 2: Mobile phone usage in pre-service teachers training programme

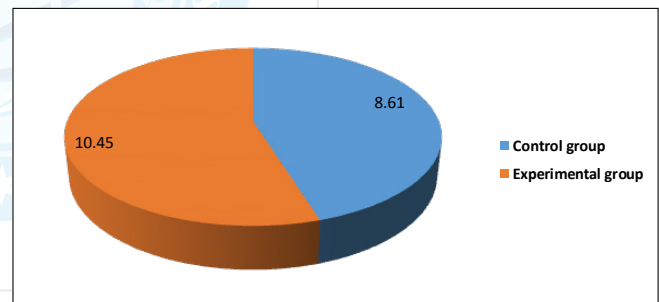


Figure 3: Comparison between Pre-test score of Control & experimental group with respect to use of mobile phone

table clearly reveals that more than 77% teacher educators opined about usage of mobile in different academic and non-academic learning activities relating to pre-service teachers training programme in Teachers Training Institution.

The Table 4 indicates the comparison between pre-test score of control & experimental group with respect to mobile usages. The pre-test analysis shows a minor difference between control (Govt. ETEI) and experimental (DIET). So there is a minor difference i.e. 1.84 score. The Figure 3 bar graphs indicate that there is a minor difference between pre-test score of the control group and experimental group. Hence the mean value of both groups is low i.e 8.61 and 10.45 respectively.

The Table 5 indicates the comparison between post-test score of control & experimental group with respect to mobile usages. The analysis of the above table reveals that there is a major difference

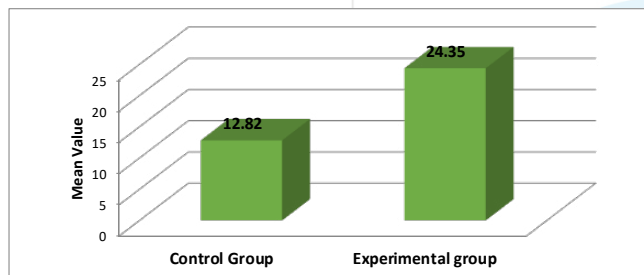
between control group score and experimental group score i.e. 11.53. Hence there is a positive impact of mobile phone usages on development teachers' competency of pre-service teachers of the Teacher Training Institution. The Figure 4 bar graphs reveal that the post test of mean score of the experimental group is higher in comparison to the control group. Furthermore it is revealed that use of mobile phones in pre-service elementary teachers training programmes has a positive effect on Capacity building of teachers on Classroom teaching learning process.

The Table 6 represents the suggestive measures to be undertaken for better development of elementary teachers' competency. The analysis of the above table reveals that the suggestive measures such as orientation on mobile phone usage for pedagogical and content enrichment programme, regular hands-on programme, provide smart phone in free of cost to each



Table 6: Suggestive measures to be undertaken for better development of elementary teachers' competency

Sl. No.	Indicators	No. of respondents	Percentage
1	Teacher Training Institution take appropriate step for better orientation on mobile phone usage for pedagogical & content enrichment	35	20.34
2	Orientation to students teacher on better use of mobile phone for classroom process	16	9.31
3	Various approaches of mobile phone usage should be adopted in elementary teachers training programme	24	13.95
4	Pre-service training programme should take special step for develop skills in this regard	13	7.56
5	Regular training and hand on programme should be organised for student teacher	15	8.72
6	Govt./ETEI should take step to provide Smart phone in free of cost/in low interest to the students teachers for better application in training programme	41	23.84
7	Teachers training institution should be fulfil in ICT facility and free internet facility	18	10.46
8	Mobile phone usage should be stressed on problem solving, creative work, research work, data analysis, practice teaching work	10	5.81
Total		172	100.00

**Figure 4:** Comparison between Post-test score of Control & experimental group with respect to use of mobile phone

student's teacher, encourage regular use of mobile phone in action research, data analysis and practice teaching, should be provided to each pre-service students teacher for better use of mobile phone for development of teacher competency in classroom process.

Major Findings

- About 50.00 students teacher are using Mobile phone in pre-service Teachers Training Programme in high level.
- More than 56.00 percent student teachers have used mobile phone in day to day life, collect information on pedagogy and content enrichment, assessment work, research/action research, preparing seminar paper, doubt clearing and downloading and saving various teacher education related matter.
- About 77.91 percent of stakeholders of Teacher Training Institution opined about proper use of mobile phone in capacity building programme for pre-service teacher.
- The pre-test score of control and experimental group is not significant.
- There is a significant effect of mobile phone usage programme is pre-service training programme on students teachers on capacity building in classroom process and other learning work.

CONCLUSION

Use of mobile phone as a learning tool is a new way of learning for teachers as well as students. Mobile devices including

handheld PC, PDA, Mobile Phones and Smartphone are used in the teaching learning process. Today mobile phones are considered as a good learning tools for teaching and learning process in 21st century. Mobile phones are used in various ways for classroom, record lectures, read e-books, provide feedback, access internet, multimedia materials, practical exercises and use of educational software to enhance the teachers accompany and learners achievement. The research study is concluded that there is a positive effect of mobile phone usage in pre-service training programme on development of teachers' competency with respect to acquiring information, capturing photo, video of classroom process, communicate various talk and message for sharing and correction and use of mobile app effectively in developing teaching materials, TLM, innovative pedagogy, assessment, report preparing, analysis of action research data, developing various competency of FLN, preparing toys, saving educational video-audio for future reference. Hence the mobile phone usage should encourage among students teachers through provide opportunities for individualized pedagogical programmed learning and computer assisted instruction.

SUGGESTION

- The Teacher Training Institution should take appropriate steps for regular mobile phone usage in pedagogical and content enrichment pre-service teachers training programme.
- Training programme should be organised to improve mobile skills among the D.El.Ed course students teacher.
- Various technological approaches for emerging applying, infusing and transforming should be adopted in teachers training programme to make knowledge free and attainable to achieve teachers' competency.
- The pre-service teachers training programme should take step to develop skill for problem solving, guided instruction with analytical thinking, active participation and self-pacing inflexible learning environment through use of mobile phone.
- The teachers training institution should take step to adopt this technology to face the challenges in emerging knowledge-based society through utilizing mobile learning technology in the teaching learning process.

Educational Implication

Findings of the can help in education of teachers of pre-service course of different Teacher Training Institution (TTI) and associated with it.

- This type of study will helpful to the policy makers as it provides latest data for the committee and analyses evidence for the pedagogical & subject expert.
- For the Teacher Training Institution the findings beneficial with regard to awareness about mobile phone based training, methodology, curriculum and skill development for teachers.
- Results of this research work will be helpful for the teacher community especially for those teachers who are working as a teachers in elementary schools level.
- It will helpful for the teacher to provide individualized pedagogical programmed learning and computer assisted instruction should be encouraged.
- The government should take steps to provide Smart Phone in free cost by offering loans with minimum interest to each student's teacher of Teacher Training Institution of Odisha.

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