

Facilities In the Teacher Education Institutions for Enhancing Certain Multimedia Skills of Student Teachers at Secondary Level

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Abstract

The study investigates the availability of facilities for developing multimedia skills among student teachers at the secondary level in Teacher Education Institutions (TEIs). As the digital age demands technically skilled educators, it is essential for TEIs to be well-equipped with both hardware and software resources that support multimedia-based teaching and learning. The data was collected from 30 institutions under three major universities in Kerala, employing a checklist to assess hardware and software infrastructure for developing certain Multimedia Skills. The findings revealed that while all institutions possessed basic hardware such as computers, printers, OHPs, and projectors, many lacked essential multimedia tools like digital voice recorders, interactive whiteboards, and TV units. Furthermore, although basic software was universally available, there was a significant deficiency in specialized software required for multimedia production, such as audio/video editing tools, graphic design applications, and e-content authoring platforms. The study emphasises the need for strategic policy implementation, technical staffing, promotion of open-source software, and infrastructural development to foster multimedia competence in future educators.

Keywords: *Teacher Education Institutions, Multimedia Skills*

INTRODUCTION

The Teacher Education Institutions are faced with the challenge of preparing new generation teachers who are technically so advanced that they could easily make a mark of their own in the digital era. So the Teacher Education systems are under pressure to equip the student teachers with the knowledge and skills of twenty first century. Presently, traditional educational approaches have resulted in a mismatch between what is taught and what is required in the educational field. Though with the advancement of technologies, the teaching profession changed from Lecture Based Instruction to Computer Assisted Learning, now it is evolving to a more Innovative Technology Mediated Learning. Designing and implementing skilful ICT enabled Teacher Education Programme is of great importance as Teacher Education Programme has a key role in the transformation of education. Hence digital learning environment should be offered to the teaching community in such a way that they become masters in planning and presenting technology-mediated teaching and learning.

According Vaughan (2011) Multimedia Skills are the diverse range of skills—detailed knowledge of computers, text, graphic arts, sound, and video.

In the present study Multimedia Skills are defined as the skills to handle multimedia by editing, manipulating and integrating text, graphic art, sound and video which can be stored, transmitted and processed digitally.

Hughes (2004) presents a vision for technology integration in teacher education that develops teachers into "technology integrationists," or teachers who thoughtfully choose to integrate technology when it supports students' subject matter learning. The four principles identified by Hughes that will help the teachers to become technology integrationists are (a) connecting

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technology learning to professional knowledge; (b) privileging subject matter and pedagogical content connections; (c) using technology learning to challenge professional knowledge; and (d) teaching many technologies.

The vision of the classroom of the twenty first century outlined by Thornburg (1999) provides two central ideas;

1. How technology is used in education by educators is more important than technology itself.
2. The investment in technology should be elevated and thinking about the technology has to be transformed by the effective use of thought, professional development, experimentation, research and willingness to develop effective strategies to integrate technology within the school curriculum.

The classrooms will get shifted to a system in which learning is constant and time is the variable; where the inexpensive technologies will replace classrooms with anywhere , anytime , learning on demand . The use of technology has occupied a prominent place in the national goals of many countries.

NEED AND SIGNIFICANCE OF THE STUDY

Pre-service teacher education has two aspects-theoretical and practical. The theoretical aspects help the teacher trainees to equip themselves with the knowledge of various dimensions of teacher education and the practical components help them to acquire the essential teaching skills. In the new era the teacher must be technologically skilled so that they could effectively mine the data and integrate different aspects to provide the necessary experience in a multi sensory mode which replicate the real environment. This retains in their memory and makes the things more clear. It is not always possible to take the child to the real situation either due to the time and money consumption or due to some other practical difficulties. In that sense it is always preferable to give the exact replication of the incidence in a required and controlled manner using technology. More over this technology helps to trace the path from its past in the history to the recent development of the topic anywhere in the world. It also helps the teacher to prepare and present the event by themselves.

Arora and Panda (1999) studied the need for restructuring Teacher Education Programme. According to them the whole edifice of quality of School education has crumbled with a global deterioration of 'Teaching', 'Teachers' and 'Teacher Education System'. In recent decades the system of Teacher education has been under serious criticism for being static and unresponsive to change in the school and overall social systems. The reforms attempted over the last few years have aimed at "introducing improvement" rather than restructuring the overall teacher education model. The system is afflicted with such a deep rooted malaise that it requires complete overhaul rather than minor modifications, in its different aspects.

In the era of digital pedagogy, multimedia is one of the powerful tools that assist teachers in effective teaching learning process. It is a more attention-getting and attention-holding method as multimedia can stimulate more than one sense at a time. A major advantage of using multimedia resources is that it gives a close-up view of images, sounds and videos without leaving the room. Leu (2000) is of the opinion that "If you are a teacher educator, you cannot afford to leave it (the integration of computers) to the professor who teaches a class on technology"

The NCF 2005 states that students should be given access to multimedia production equipment to "mix and make their own productions" to present their experiences and "explore their own creative imagination."

A study of Teacher Education Programme with special reference to unification of B.Ed Curriculum (NCTE, 2000) reported that the syllabus prescribed by the universities did not cover all the requirements of teacher education. The proper emphasis on science and Technology, guidance and counselling, ability and achievement and work experience were not given due place in the syllabus. Scholastic expertise in the subject and background in the liberal arts and science did not guarantee effectiveness in teaching. This recommends 'Techno-Pedagogy' as an inevitable part of Teacher

Education Programme which demands proper infrastructure facilities for the development of Multimedia Skills.

REVIEW OF RELATED LITERATURE

Thakur (2015) points out some challenges faced by techno-pedagogical skills In higher education, such as destitute infrastructure of ICT, scarce competence on English language and online content, calamity, and lack of incentives and awareness of teachers, evils on research and development, hitch of using software, limited techno-pedagogical resources, lack of coordination among the departments, frequent power outages and fluctuations. The study also suggests the ways to overcome these challenges by developing infrastructure, enhancing competence on English language and online content, dissolving the crisis of teachers, comprising of incentives of teachers, resolution on research and development, encompassing of awareness of existing techno-pedagogical services, using of licensed software, eternal techno-pedagogy supportive resources, improving coordination among the departments, removing of frequent power outages and fluctuations, developing e-Content and web page for techno-pedagogical skills, developing Computer Based Learning Resources Management Systems, increasing publicity about existing ICT services.

Geser and Hornung-Prähauser (2010) presents the Austrian country report which addresses the national frameworks and requirements, the institutional frameworks and requirements regarding the use of ICT in initial teacher training in teacher training institutions in Organisation for Economic Co-operation and Development (OECD) countries, the extent and ways of technology use in teacher training institutions and the main obstacles according to the stakeholders. The related recommendations to teacher training institutions and policy level were to foster a positive attitude among teacher trainers towards ICT use in teaching, promote further the use of available digital teaching and learning material, promote sharing of teaching material within university initiatives for open access to academic content and make the teachers aware of available best practice and evidence of improvement in teaching and learning outcomes.

Zhang (2000) conducted a study on pre-service teachers training and the use of educational technology. The findings showed that technology courses in any teacher education program must harmonize theory and practice, to enhance teaching and learning with technology. It also recommended that technology competencies must be learned in both a practical and philosophical context and pre-service teachers must be able to apply the skills that they have learned in a classroom to a real curriculum.

OBJECTIVE OF THE STUDY

The objective of the study was

- To find out the facilities available in teacher education institutions for developing Multimedia Skills of student teachers at secondary level.

METHODOLOGY IN BRIEF

The study was conducted by Survey method. A survey was conducted to analyse the facilities available in the Teacher Education Institutions and the extent of access to facilities for developing Multimedia Skills.

SAMPLE

The details of the facilities available for developing Multimedia Skills were collected from 30 Teacher Education Institutions. The sampling technique used for survey is Non Proportionate Random Sampling giving due representation to Type of Management.

The breakup of the sample is as given in Table 1.

Table 1. Break-up of the sample of Teacher Education Institutions selected for survey

Sl. No.	Name of University	Type of Institution	Number	Total
1	University of Kerala	Government	1	10
		University Centre	2	
		Aided	2	
		Un-Aided	5	
2	University of Calicut	Government	1	10
		University Centre	3	
		Aided	2	
		Un-Aided	4	
3	Mahatma Gandhi University	Government	0	10
		University Centre	3	
		Aided	3	
		Un-Aided	4	

TOOLS AND TECHNIQUES OF THE STUDY

The tool used for collecting data for the present study was

- CHECKLIST ON FACILITIES AVAILABLE FOR MULTIMEDIA (Prepared by the Laya A B and Dr. T V Thulasidharan)

STATISTICAL PROCEDURES EMPLOYED

The data collected was subjected to analysis using various statistical techniques such as

- Computation of Percentage

ANALYSIS AND INTERPRETATION OF DATA

To find the facilities available in teacher education institutions for developing multimedia skills, the data given by the teacher education institutions were computed under two dimensions hardware for developing Multimedia Skills and Software for developing Multimedia Skills.

Hardware Facilities for Developing Multimedia Skills

To find the facilities available under the dimensions hardware for multimedia production in teacher education institutions for developing multimedia skills, the percentage of responses of the data was computed. The details are given in Table 2.

Table 2 Hardware Facilities for Developing Multimedia Skills

Hardware for Developing Multimedia Skills	Yes	No
Computer\ Laptop	100.00	0.00
Scanner	76.47	23.53
DVD\VCD Player	88.24	11.76
Digital Voice Recorder	35.29	64.71
Digital\Video Camera	76.47	23.53
Web Camera	88.24	11.76
Printer	100.00	0.00
Public Addressing System	94.12	5.88
TV	64.71	35.29
OHP	100.00	0.00
LCD\Digital Projectors	100.00	0.00
Interactive Whiteboard	64.71	35.29

From Table 2, it is clear that all the institutions have the Computer (100%), Printer (100%), OHP (100%) and LCD\Digital Projectors (100%). The percentage of institutions possessing other facilities are Scanner (76.47%), DVD\VCD Player (88.24%), Digital Voice Recorder (35.29%), Digital\Video Camera (76.47%), Web Camera (88.24%), Public Addressing System (94.12%), TV (64.71%) and Interactive Whiteboard (64.71%).

The above responses indicated that almost all the institutions have the Computer, Printer, OHP and LCD\Digital Projectors. Most of the institutions have Scanner, DVD\VCD Player, Digital\Video Camera, Web Camera and Public Addressing System. Many of the institutions lack Digital Voice Recorder, TV and Interactive Whiteboard.

The result is diagrammatically presented as follows

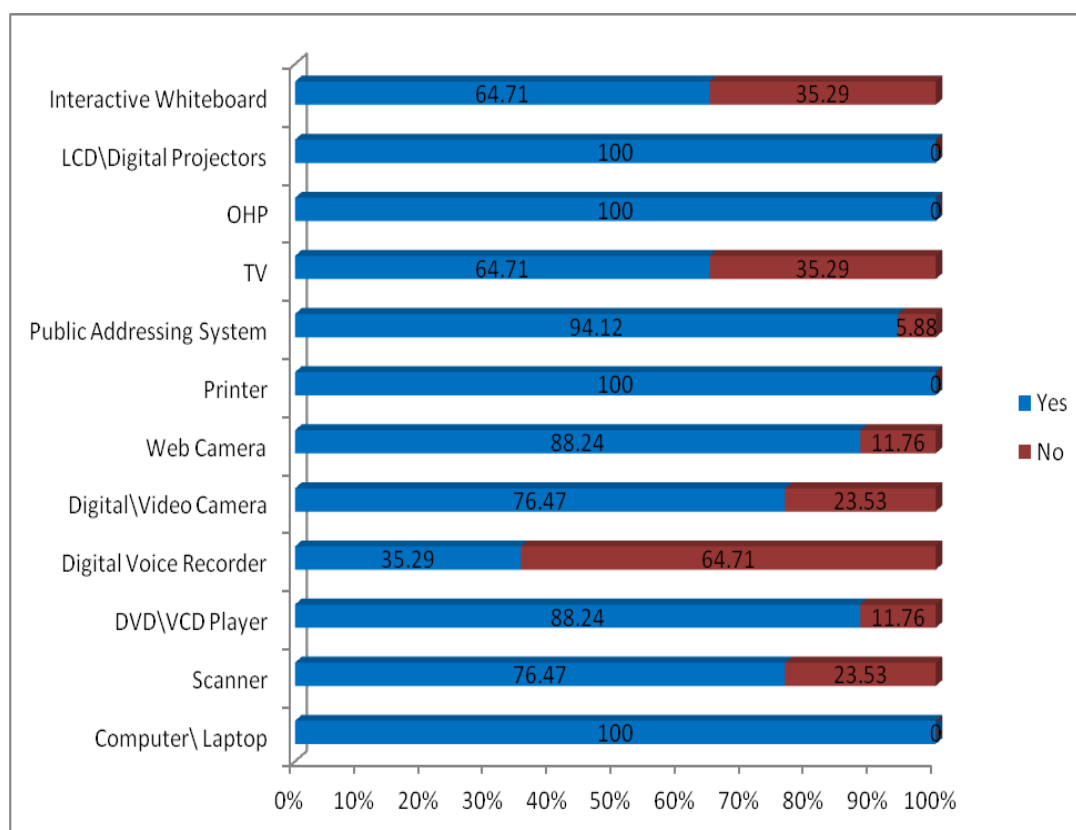


Figure1. Hardware facilities for developing multimedia skills

Software Facilities for Developing Multimedia Skills

To find the facilities available under the dimensions software for multimedia production in teacher education institutions for developing multimedia skills, the percentage of responses of the data was computed. The details are given in Table 3.

Table 3. Software Facilities for Developing Multimedia Skills

Software for Developing Multimedia Skills	Yes	No
Basic Software	100.00	0.00
Audio Editing Software	35.29	64.71
Video Editing Software	35.29	64.71
Graphic Software	29.41	70.59
Animation Software	17.65	82.35
E- Content Authoring Software	17.65	82.35

From Table 3, it is clear that all the institutions have the Basic Software (100%) in their institution. The percentage of institutions possessing other facilities for other software are Audio Editing

Software (35.29%), Video Editing Software (35.29 %), Graphic Software (29.41 %), Animation Software (17.65%) and E- Content Authoring Software (17.65%).

The above responses indicated that almost all the institutions have the Basic Software as it is needed for the working of computers. But most of the institutions lack audio editing software, video editing software, graphic software, animation software and E-content authoring software which is needed for developing multimedia skills.

The result is diagrammatically presented as follows

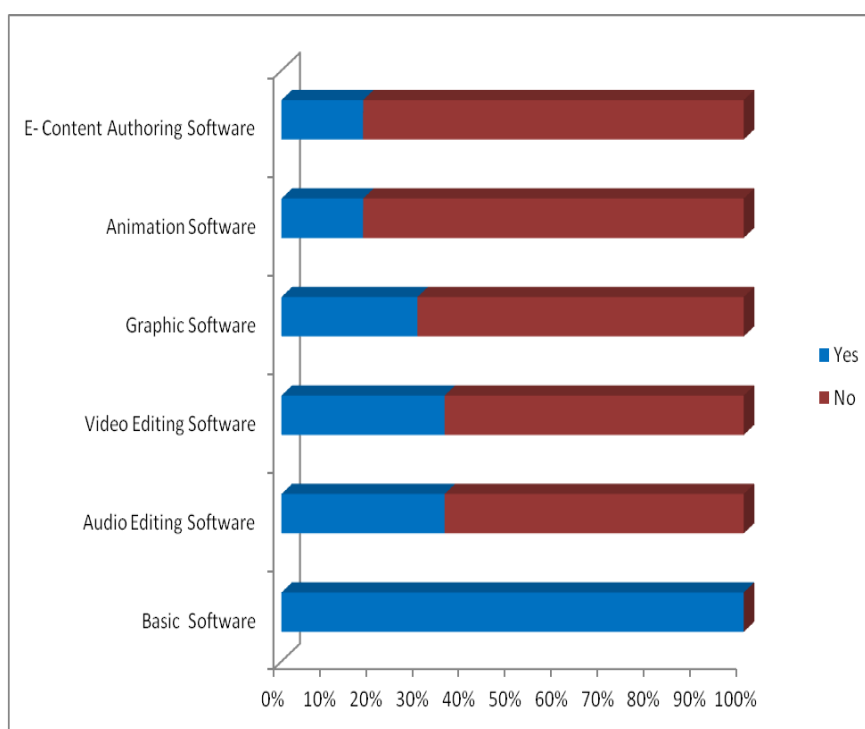


Figure 2. Software facilities for developing multimedia skills

MAJOR FINDINGS OF THE STUDY

The major findings of the study are as follows

- All the institutions have the Computer, Printer, OHP and LCD\Digital Projector.
- Most of the institutions have Scanner, DVD\VCD Player, Digital\Video Camera, Web Camera and Public Address System.
- The institutions having Digital Voice Recorder, TV and Interactive Whiteboard are comparatively less in number.
- The study reveals that Basic Software is available in all colleges
- Most of the institutions lack audio editing software, video editing software, graphic software, animation software and E-content authoring software which are needed for developing multimedia skills

SUGGESTIONS

- Government authorities should adopt schematic policies for the building the facilities for promoting technology.
- There is a need of recruiting staff for technical support and competent and qualified teachers from the discipline of ICT and Multimedia.
- The NCTE and authorities should set specific criteria for Hardware and Software facilities in the Teacher Education Institutions considering the fast advancements in the field of technology which enhances Technology Integration in teaching.

- The authorities should provide benchmarks for ICT facilities with clear institutional policies and proper assessment mechanisms.
- A proper mechanism for servicing the hardware facilities should be made and should be properly monitored.
- The usage of audio editing software, video editing software, graphic software, animation software and E-content authoring software which are needed for developing multimedia skills should be enhanced in the Teacher Education Institutions.
- A culture of using open software can be inculcated in Teacher Education Institutions.

CONCLUSION

The technological development has brought out revolutions in most of the fields; the educational field though is slowly progressing. It is also evident from the review of literature that for developments in Technology to take place the teacher education institutions should have good infrastructure facilities and there should be proper technical and staff support. These all will lead to more access to technology which will develop an attitude in the prospective teachers so as to keep along with the advancements of the technology there by reducing the negative factors like Techno phobia and attitude to become stagnant with the traditional methods of teaching.

The analysis of the facilities available in teacher education institutions showed that many of the colleges lack Scanner, Digital Voice Recorder, Digital / Video Camera, TV and Interactive White board along the dimension Hardware. The basic needs of hardware like a computer, printer, projector and LCD are available in most of the institutions. They also have the basic software needed for it's working. But enhancement of multimedia skills will be done only if the software related to multimedia production and presentation are available. Though the institutions have access to many of the free software, they are not aware of it and not using it in a proper manner. So a culture of using open software must be inculcated in Teacher Education Institutions.

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