



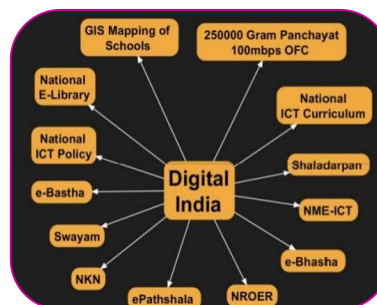
TECHNO-PEDAGOGICAL COMPETENCY OF TEACHERS: AN AREA OF CONCERN IN THE 21ST CENTURY HIGHER EDUCATION

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ABSTRACT

In the 21st century the technologies have brought a revolution in the field of education. Today Educationists are believed that modern technologies can advance educational goals and shape education to meet the needs of the present time. Now-a-days most theorists and researchers agree that Technology is an important and potentially effective educational tool. National Policy on Education (2016) stated that the education sector, both school, and higher education, can greatly benefit by judicious use of Information Communication Technology (ICT). In education, we can take the benefit of technology only if the teacher possess techno-pedagogical competency. The main purpose of the present study is to provide an understanding of the importance of techno-pedagogical competency of teachers, role of teachers and the problems related to techno-pedagogy practices in higher education. The researcher also try to give some suggestions to the problems related to techno-pedagogical practices.



KEYWORDS: Techno-Pedagogical Competency, ICT, Higher Education, Learner-Centred Environment.

INTRODUCTION:

The advancements in science and technology and their application have yielded rich dividends in almost all matters related to the organization and management of the processes and products of education. The modern technologies have brought a revolution in the field of education. Today Educationists are believed that modern technologies can advance educational goals and shape education to meet the needs of the 21st century. Most theorists and researchers agree that Technology is an important and potentially effective educational tool. 'Technology in Education' facilitates active learning and higher-order thinking; fosters cooperative learning and reflection about the content, and provides the platform for learning content differentiation and individually tailored feedback. The effective use of technology in the pedagogy is a complex, comprehensive process that covers a long way of implementation of different projects and action plans involving not just technology but also teachers' technology competence. The role of teachers is very important in all phases of Technology use in the pedagogy of higher education. Teachers are required to decide how to make appropriate educational use of technological tools in the classrooms. Teachers can use technological tools to produce high-quality teaching materials which will stimulate and develop interest among students in higher education. All this is possible if the teachers possess Techno pedagogical competency. The techno-pedagogical competency is the efficiency of the teachers to make use of technology effectively in all the aspects of pedagogy. The teachers have to develop techno-pedagogical competencies then they may try to make use of this often in teaching and it will, in turn, make the learning process simple and effective. Thus the researcher felt that the role of Techno pedagogical competency of teachers in higher

education is one of the important domain needs to be explored for developing awareness and positive attitude among teachers towards Techno-pedagogical competency.

OBJECTIVES OF THE STUDY

1. To analyse the role of the teachers who possess Techno pedagogical competency.
2. To analyse the importance of techno-pedagogical competency of teachers.
3. To find out the problems related to techno-pedagogical practices.

METHODOLOGY

In this present study, a descriptive Analytic method is used. The study is conducted on the basis of the information obtained from the several secondary sources like Articles, Theses, E-Books, Journals, Expert opinion, and websites etc.

WHAT IS TECHNO-PEDAGOGICAL COMPETENCY?

Literally, 'techno' refers to the art-skill in handcrafting and 'pedagogy' refers to the art-science of teaching. Therefore, it can say that techno-pedagogy is the art of teaching with the help of technology to enhance the academic performance of the students.

In techno pedagogy, there are three areas of knowledge, namely: content, pedagogy, and technology. Content is the subject matter that is to be taught. Technology encompasses modern technologies such as a computer, Internet, digital video and commonplace technologies including overhead projectors, blackboards, and books. Pedagogy describes the collected practices, processes, strategies, procedures, and methods of teaching and learning. Consequently, Techno-pedagogical competency is the sufficiency of teachers in integrating of these three areas of knowledge and its application in teaching-learning situation. It is the ability of teachers to access information, create solutions, analyze and apply knowledge in teaching and learning process by using of ICT facilities.

According to Sathiyaraj (2013), "The techno-pedagogical competency is the ability and the expertise of the teachers to make use of necessary technology appropriately and effectively in teaching".

According to Guichon & Hauck (2011), Techno-pedagogical competency includes the capacity to:

- Assess the potential and limits of technologies for learning;
- Carry out a needs analysis to introduce appropriate technologies in a pedagogical sequence;
- Handle basic tools to solve simple technical problems;
- Design appropriate tasks;
- Design interactions within and outside the classroom with the help of technologies;
- Rethink the contract with learners and colleagues;
- Manage time and optimize the integration of technologies.

IMPORTANCE OF TECHNO-PEDAGOGICAL COMPETENCY OF TEACHERS

Techno-pedagogical competency of teachers is an important weapon to transform the classroom environment from traditional 'teacher-centred' to 'learner-centred'. With this competency, teachers will be able to integrate technology into the pedagogy that helps to promote the active learning, collaborative learning, creative learning, integrative learning, and evaluative learning and also helps to prepare and manage a learner centred environment (Tinio, 2013).

In the 21st century, students are mostly dependent upon technology in every sphere of their life and it's become a natural part of their environment. That is why their expectation is that technology will be used in the classroom teaching-learning process to help them learn, develop essential IT skills, and master the technology fluency necessary in their specific subject domain (Keshwan, 2015, p.26). Consequently, Techno pedagogical competency is one of the important ability of the teachers for effective teaching through the need satisfaction of the students.

The teacher can present the difficult concept in a more easy way for making it understandable to the students by using different technological tools like projectors, television, electronic whiteboards etc. it also helps to develop curiosity among students to the content knowledge. It can be effective to change the way of interaction, cooperation among the students and teachers.

Techno-pedagogical competency helps the teachers to create a technology-supported learning environment. It promotes an integrative approach to teaching and learning and also encourages the manipulation of existing information and the creation of real-world products rather than the regurgitation (Koushlesh, & Yadav, 2015, p.6). Also, techno pedagogical competency has a positive impact on individual innovativeness and critical thinking skills of teachers (Cuhadar, Bulbul, & Ilgaz, 2013, Yildiz, 2017).

Therefore, from the above discussion it can say that Techno-pedagogical competency is an important ability of the teachers that need to be developed for imparting knowledge to the students in a meaningful way.

ROLE OF THE TEACHERS

Teachers can play an important role in teaching learning process who possess techno-pedagogical competency. Simply, it is the ability of teachers to incorporate technology into the pedagogy. Sondhiya (2015) reported that Teachers who use different types of technologies tend to practice more “constructivist” pedagogies. The role of the teachers who possess Techno pedagogical competency is to -

- Incorporate digital media for the present the teaching material so that students are able to use multiple sensory modalities. It helps the learner to pay more attention to their learning task.
- Present all the practical aspect of theoretical knowledge in the classroom teaching-learning situation by introducing different kinds of modern technology.
- Enrich themselves by collecting more recent data related to the topic to be taught by using the internet.
- Encourage the students to use the latest ICT tools for increasing the level of peer to peer interaction and student-teacher interaction outside the classroom.
- Help to cultivate practical knowledge among students so that they can actively participate in the teaching-learning situation and realise the relevance of their learning to the real world.
- Produce learning material which is sequentially organised and integrating up to date information.
- Provoke the students to ask questions and develop new ideas about the topic by introducing digital media in the classroom.
- Present the content material to the students more comprehensibly by exploring different dimension.
- Using technology to gather, organize, and report information about student performance.
- Develop tools to evaluate student assignment, projects including word processing, database, spreadsheet, PowerPoint etc.

PROBLEMS RELATED TO TECHNO-PEDAGOGICAL PRACTICES

There are many challenges in practicing techno-pedagogy into the higher education environment. These are the challenges related to infrastructure, availability of ICT tools, language, and content, financing the cost of ICT use and capacity building of teachers, administrators, Technical support specialists, content developers.

In the context of the equity of access to ICTs in education, Tinio (2003) claimed that women have less access to ICTs and fewer opportunities for ICT-related training compared to men. The author also stated that there is no one formula for determining the optimal level of ICT integration in the educational system. Besides these, inability of teachers to understand why they should use ICTs and how exactly they can use ICTs to help them teach better and anxiety of teacher over being replaced by technology can hinder to ICT adoption in teaching-learning process. Desai and More in their study on “Barriers to Successful ICT Integration into Teaching-Learning Environment” identified some teacher related barriers to successful ICT integration into teaching-learning environment. These are lack of teacher confidence, competency,

motivation to change and lack of technology perception. Also, the teachers' anxiety towards the use of instructional aids and attitude towards using new technology in teaching are important factors that play an important role to hinder the techno-pedagogical practices (Sathiyaraj&Rajsekar, 2015). Besides these, introducing technology into the teaching-learning process is time-consuming for the teachers.

SUGGESTIONS

With the content knowledge and pedagogical knowledge, all the teacher must develop their technical knowledge and competency. They have to know the nature of technology, how to use and apply a variety of technologies in the classroom teaching-learning process, and the impact of ICT on students' academic performance. All these is possible if the teachers training institution takes this responsibility. They should play a vital role in developing techno-pedagogical competency among the teachers. All the training institution should share the techno-pedagogical components and develop the basic technical skills of the teachers throughout the training programme and also make sure that trainees put pedagogical objectives before technological ones (Gloria & Benjamin, 2014).

According to Tinio (2003), Teacher professional development programme should have five foci: 1) skills with particular applications; 2) integration into existing curricula; 3) curricular changes related to the use of IT (including changes in instructional design); 4) changes in teacher role; and 5) underpinning educational theories.

Further, to meet the challenges related to techno-pedagogical practices in higher education there is need to develop adequate infrastructure, improve the English language proficiency of the teachers, develop awareness of existing techno-pedagogical services among the teachers and develop a positive attitude towards using new technology among teachers.

CONCLUSION

In the 21st century people all over the world heavily rely on technology in each and every moment of their life. Now-a-days as a part of knowledge-based society students are also become habitual with the technology for seeking information. So, if the lecture method is frequently followed in the classroom as a method of teaching then the teaching-learning process will be monotonous. Consequently, it is expected for the teachers to incorporate technology in designing teaching-learning situation so as to enrich the learning outcome. Teachers can use technological tools for providing motivation, preparation for teaching, presentation, for evaluation purpose and to produce high-quality teaching materials. That is why Techno-pedagogical competency of teachers now becomes a new area of concern for quality development in 21st century higher education. Especially developing countries are lacking behind using technology in education due to lack of awareness about latest technological tools, connectivity problem in rural areas and lack of English language proficiency of teachers. So, it can be said that there is a need to give more emphasis on these areas along with the development of techno-pedagogical competency of teachers.

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