



ROLE OF TEACHER AS A TECHNO-PEDAGOGUE: IMPORTANCE OF DEVELOPING TECHNO-PEDAGOGICAL SKILLS AMONG PRE-SERVICE TEACHERS

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ABSTRACT: Teaching is considered as an art as well as science for a right reason as it defines the versatile role played by a teacher in a classroom. An effective teacher needs to be creative in his thoughts, his actions which would eventually reflect his own unique philosophy, talents and his personal style. In this era of pandemic where people are everyday struggling to fight up with the losses and coming up with new innovations, a teacher should also be one who needs to find out what works best in what kind of situation. He or She should be ready enough to deal with all kinds of challenges coming on their way so that the teaching learning does not get affected. The teacher needs to experiment all kinds of techniques, strategies, methods, approaches and should be acquainted with the new innovations in the field of education.

In this era of information and communication technology, Technology plays a very important role in the development of human society. Based on this fact it becomes necessary for a teacher to become a Techno-pedagogue. It is a term used for a person who is well aware of the techno-pedagogical skills; use of technology in teaching learning process, to make the process more comfortable; to provide information with utmost clarity. Now that the teachers are the ones accountable to create a society full of responsible citizens, they are supposed to be trained in such a way so that they can contribute towards society in a more worthy way. This study is designed to explore how a teacher should play the role of a techno-pedagogue, alongside it also focusses on the importance of developing techno-pedagogical skills in pre-service teachers.

Keywords: Techno-pedagogue, Techno-pedagogical skills, Pre-service Teachers

1. Introduction

In the words of Joyce Meyer Teachers can change lives with just the right mix of chalk and challenges.

This has been aptly remarked because teachers are the ones who are considered responsible in building nation. They are the ones who lives no stone unturned to provide quality education to the learners. On the basis of this context teachers therefore are required to be well built, having enough knowledge so that they can fight the existing challenges and those coming on their way to provide quality education. Teacher Education thus has received tremendous importance as this one is the programme which focusses on producing efficient teachers who can contribute to the overall education system. According to The National Council for Teacher Education (1998) teacher education a programme of education, research and training provided to teach from pre-primary to higher education level. The focus is to develop teacher proficiency and competence that would enable and empower the them to meet the requirements of the profession and face the challenges therein.

In the 21st century, Information and Communication Technology has played its part beyond expectations. Technology in every way possible has given immense support to each and every sector. Talking about the field of education, it has introduced a huge number of innovations and techniques which has changed the outlook towards teaching learning process. During the time of pandemic, technology came as the saviour who helped in all way possible to lessen the losses. Utilizing information technology in communication and different teaching technologies with teaching methods has a very positive impact (Palanisamy, Paavizhi and Saravanakumar, 2020). This is why it is important for a teacher to be trained with techno pedagogical skills so that he or she can play the role of a Techno-pedagogue in a classroom. This new change in the field of education can make a drastic change if done with proper planning. Technology based teaching and learning provides numerous options like educational websites, videos, workshops, discussion forums, mind map etc. to make the process more interesting and effective. This paper is narrative in nature and focusses on analysing the role of teacher as a techno-pedagogue and the importance of developing techno-pedagogical skills in pre-service teachers.

2. Significance of the study

Despite a tremendous discussion and researches done on technology and its integration in the field of education, a huge numbers of flaws can be outlined. Integrating technology in classroom is still a matter of concern for teachers as they find it challenging. Researches Show that there is a need to integrate ICT in education, its challenges and measures. However it is also imperative for a teacher to know how he or she needs to contribute towards the successful integration. For that reason a teacher needs to get well acquainted with role of a techno-pedagogue. Likewise it is necessary to develop techno-pedagogical skills in the pre-service teachers during the teacher training programme so that they can play the role of a techno-pedagogue quite efficiently and become aware about using educational technology in developing the subject as well as on teaching-learning process. This study is significant because it focusses more specifically on the necessity of developing techno-pedagogical skills in pre-service teachers along with the role they need to play in a technological environment.

3. Operational Terms Defined

Pedagogy: It refers to the use of knowledge and skills used to teach a subject matter in classroom with proper methods, methodology, approaches and techniques.

Technology: Use of machinery equipments and resources in educational context

Techno-pedagogy: Refers to the use of both pedagogical and technological aspects together to make teaching-learning go at ease

Techno-pedagogue :a person who knows the appropriate use of technological resources to achieve educational outcomes

Techno-pedagogical skills: a person who can use or integrate technology into classroom teaching-learning for pedagogical purpose is known to have acquired techno-pedagogical skills

4. Methodology:

A narrative review process is used in this paper to explore numerous number of experiences of different authors in their articles and research studies.

5. Selection Process:

Selection for review is done in accordance to techno-pedagogical skills and related topics and terminology. To simplify the review process, a minimum number of research articles and journals are solicited.

6. Research Questions

- i. What kind of role a teacher has to play as a techno-pedagogue?
- ii. How to develop techno-pedagogical skills in pre-service teachers?

7. Role of Teacher as a Techno-pedagogue

Out of all the stakeholders, teachers are considered to be the vital part as they are the ones who facilitate student-learning. With the changing demands of the society our role as teacher is also changing. Teachers who earlier were bound to teach or provide education within the boundaries of classroom are now expected to play a versatile role. With the introduction of smart classrooms and then with this blended mode of learning, there is a fundamental shift in the understanding of pedagogy and its related elements. Teachers as Techno- pedagogue should have pedagogical skills and technological knowledge along with content knowledge. They should –

- Have knowledge about ICT
- Have ideas about e-resources available
- Build technical teaching ability
- Have knowledge about TPACK model.
- Represent the concept from the content with help of technology.
- Use technology in different ways to communicate content.
- Integrating pedagogical techniques with technologies and technological tools to make teaching learning process run at ease.

8. TPACK MODEL

In the year 2006 Mishra and Koehler, researchers from Michigan State University, developed TPACK framework according to which specific technological tools are best used to instruct and guide students towards a better and clear understanding of the subject matter. The three kinds of knowledge addressed: technology, pedagogy and content. Seven components are included in the TPACK framework:

1. Technology knowledge(TK): Technology Knowledge refers to the knowledge about various technologies, how to implement the same in classroom teaching
2. Content Knowledge: Content knowledge is the knowledge which is related to the teaching of the actual subject matter by the teacher and to be learned by the learners. Teachers must have a mastery over the content they are going to execute in the classroom.
3. Pedagogical Knowledge (PK): This knowledge suggests Teachers' deep knowledge about the processes and practices methods of teaching and learning according to Koehler and Mishra, 2009. This serves the overall educational purposes, values and aims. This particular form of knowledge applies to the understanding of how students learn, general classroom management skill, lesson planning and student assessment.
4. Pedagogical Content Knowledge (PCK) - PCK is that knowledge which helps the teacher in enhancing students' understanding by including specific ways to teach specific content. It is based on the notion that teaching and learning is beyond transmission of knowledge and absorbing the same by students.

5. Technological Content Knowledge (TCK) - This refers to the knowledge of integrating technology in communicating content. Teachers must have the knowledge about technologies which are best suited for delivering the content matter or how both the technology and content influence each other.
6. Technological Pedagogical Knowledge (TPK): This refers to the understanding of how teaching and learning can get influenced positively when particular technologies are used in particular ways.
7. Technological Pedagogical Content Knowledge (TPACK): —TPACK can be best understood in terms of effective teaching with technology which requires a better understanding of the presentation of concepts using technologies; pedagogical techniques that use technologies in meaningful ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help in providing solutions to some of the problems that students face. Here are the dimensions of the model mentioned.

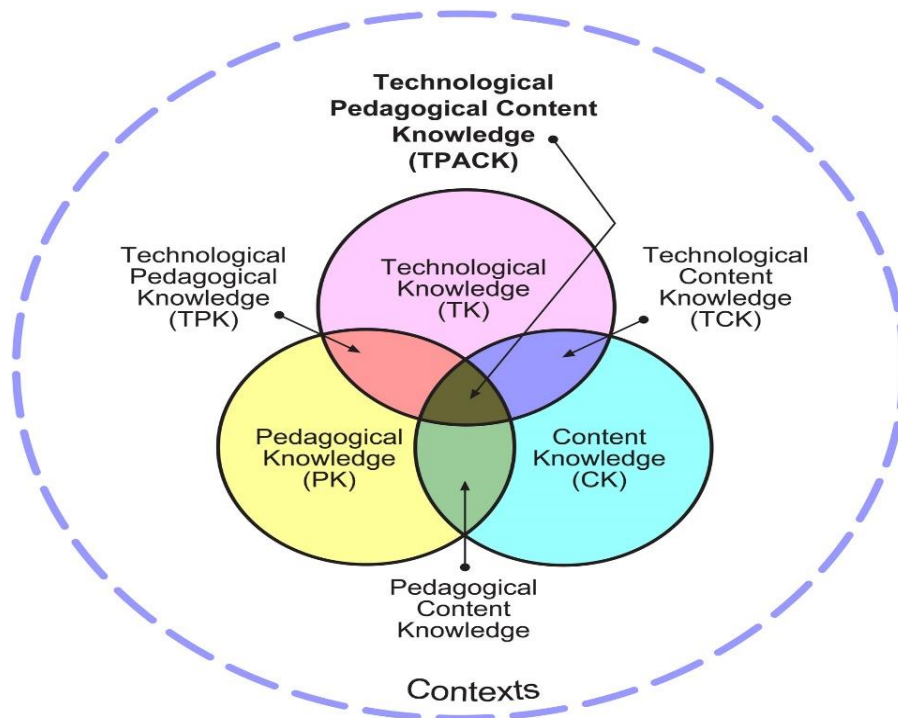


Figure 1: The Dimensions of the Technological Pedagogical Content Knowledge Approach (Source: Koehler & Mishra, 2009)

The knowledge about the components of TPACK model is utmost necessary for a teacher to cope up with technology friendly teaching learning environment. A teacher needs to acquire all necessary knowledge about technology so that they can easily teach their subject matter with the use of technological resources available.

9. Ways of Developing Techno-Pedagogical skills in Pre-service teachers

- i. The pre-service teachers are required to get introduced to the various skills required to become a techno-pedagogue. Despite having a good grasp over the pedagogical content teachers are not able to deal with the new innovations. In that context they are supposed to make knowledgeable regarding the techno-pedagogical skills, TPACK framework through workshops, seminars, discussion forums, webinars, etc alongside classroom teaching.
- ii. This is a known fact that to bring change in the society one needs to change one's own self. Similarly if the teachers want to bring a desired change in the attitude of others towards techno-pedagogy they need to bring a change in their attitude too. They should be mentally prepared themselves first with the usage of techno-pedagogical skills before expecting the learners to accept the necessity of techno-pedagogy.
- iii. However only acceptance of the facts is not enough, the pre-service teachers should be given some amount of knowledge on ICT: its usage, hardware and software, etc. They should be skilled in operating the new technologies and in utilizing those as educational tools. Only then it will be possible to develop techno-pedagogical skills.
- iv. Expertise are necessary in every field, be it a business or education sector. Institutions are required to hire full time or part time expertise who can provide technical assistance to pre-service teachers.
- v. All others who are related in developing this particular competency also should be trained. Preliminary training for the teacher educators is also necessary before transmitting their knowledge to others.
- vi. Micro-teaching classes should be properly co-ordinated with techno-pedagogic abilities. Alongside the basic knowledge of ICT, pedagogical aspects to be taught to pre-service teachers.
- vii. All the other existing issues related to infrastructure, network, resources or so on should be looked beforehand.

10. Importance of Developing Techno-pedagogical skills in Pre-service teachers

- i. They will become efficient in attaining learning objectives related to content with the use of technology.
- ii. This will allow them to trace the drawbacks in various learning systems and to evaluate its benefits.
- iii. It will help to give a critical and reflective vision to the thinking abilities of the pre-service teachers which is required to survive in this age of competition.
- iv. It will teach time management skills too as the teachers will be able to deliver their content in less time but in a more efficient way.
- v. The pre-service teachers will be able to plan appropriately, design instructional materials to teach particular content in a particular way.
- vi. They will not only learn to incorporate technology in a physical classroom but will also learn to utilize in online learning environment which is of utmost importance in this new era of pandemic.

11. Conclusion

The 21st century demands teachers to use new technological innovations in classroom teaching and learning and is in fact justifiable. Teachers are expected to expand their teaching beyond the conventional mode. This is only possible when we inculcate such attitude in our teachers and this starts with the training of the pre-service teachers themselves. During the covid outbreak when teachers opted for online mode of teaching, they faced many difficulties due to lack of training in this field. That's why it is very important to train our prospective teachers for a world of teaching and learning where they are familiar with all sorts of new innovations and technologies to make their teaching learning effective and thereby moving a step ahead to become a techno-pedagogue in recent years.

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