

Various Criteria of Techno- Pedagogy in Teaching- Learning Process

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Abstract: *Through this chapter it is aimed to know the various criteria of Techno-pedagogy in teaching - learning process. In this ever evolving world, amendment is that the solely constant. Progress is not possible while not adapting to the dynamical circumstance. As a result of advancements in science and technology there ought a paradigm shift in teaching -learning method and one to adopt to those changes to be profitable. The impact of technology on education sector is palpable and thought of as a god in disguise because it is aiding in clearing the impediments that prevail within the method of instruction the least bit levels of education. Technology with promote universal access to education render quality education, encourage the teaching fraternity towards their skilled development and the impact of technology on teaching and learning is immeasurable. In teaching -learning process teachers are apply pedagogy in the context of classroom and teachers measure this impact in the achievement of students. So, the multiple skills of teachers are most important in the present day context. In various educational institutions, the technological component is use teacher in the classroom (projectors, slide etc.) So, update of teachers pedagogical skill is most important and its impact to student's success. Various technological challenges are removing in various contexts. In this perspective due to the rapid change in the field of ICT in teaching -learning process. So, in the present context techno-pedagogical knowledge and skill most important in teaching -learning process.*

Keywords: ICT, Pedagogy, Teaching, Techno-Pedagogy competency

I. INTRODUCTION

Pedagogy refers to the art and Science of Teaching and 'techno' refers to the art skill in handwriting derived from the Latin 'texere'. Techno-Pedagogy refers to weaving the technique of the craft of teaching into the learning environment itself today. Our societies are technological oriented. So, technological knowledge of teacher are most important in present day teaching learning process. The pedagogical knowledge and skill of teacher are most significant in another way and both knowledge (techno & pedagogy) are most relevant in teaching-learning process. In the classroom situation teacher's pedagogical knowledge and skill both are most significant. The teachers are present in the content in teaching-learning problem in step by steps and simple to complex. So, pedagogical knowledge of teacher are most important. Teacher technological equipment use of knowledge and skill both are relevant. The learning environments of today are gradually being transformed by the use of media ICT and the use of multimedia technologies has become a vital component of the teaching-learning process. The objective is not to prepare technocrats, but to develop techno-pedagogies. Techno-pedagogy is the art of incorporating technology in designing teaching-learning experience so as to enrich the learning outcome to make use of internet technology, exploring it, accessing information from it to use in teaching learning process.

1.1 Techno-Pedagogy

- The term refers to (teaching) practices that take under consideration each education (teaching and learning ways, motivation, the event of students skills); and technological aspects (using computers, the net, interactive white boards etc.).
- The term wont to check with education practices and ways that embody the combinations of technology as a primary element, learn additional in: concerns for future technology development supported EFL Teachers integration of Technology.

- Technology mediate teaching and learning scheme for open and distance learning.

1.2 Technological Knowledge

All the teachers are expected to have technology knowledge. In present day, technology plays a very significant role in our society. Teachers use various technological devices (computer, PPT, projectors, overhead projector etc.) in teaching-learning process. In teaching-learning environment teachers present various content through the technological device. Technological knowledge in education means the knowledge about all the standard teaching technologies from books to blackboard and the recent advanced technologies such as internet and digital videos. The technology knowledge includes the knowledge about the hardware of computer and to use the software like word Processor, Power Point, E-mail, Excel Spread Sheets, and Publisher etc.

1.3 Pedagogical Knowledge

Pedagogical knowledge is the profound knowledge about the procedures and practices of methods of teaching and learning. It also includes the knowledge of overall purposes, aims and values of education. According to Schulman (1986) claimed that the emphases on teachers subject matter knowledge and pedagogy were being treated as mutually exclusive. He believed that teacher's education programs should combine the two knowledge fields. To address this dichotomy, he introduced the notion of pedagogical content knowledge (PCK) that includes pedagogical knowledge, among other categories. His initial description of teacher's knowledge included curriculum knowledge and knowledge of educational context.

1.4 Use of Techno-Pedagogy in Teaching-Learning Process

Techno-Pedagogy can help in enhancing the equity in educations promoting universal access to education, supporting the delivers of quality learning and teaching teachers, professional development and more efficient education management, governance and administration. Study materials can be developed using techno-pedagogy. The linguistic abilities and research activities can be develop through techno-pedagogical skills. The teacher who develop technopedagogic skills maybe a multi-teaching personality and will be highly respected by the students. Others use of techno-pedagogic skills include the improvement life skills of student.

1.5 Techno-pedagogic Resources for Teaching-Learning Process

- Enhance linguistic abilities.
- Develop Teaching-Learning process.
- Improve to develop study materials.
- Design multi grade instruction.
- Plan specific pedagogy.
- Support in Distance Education through e-learning.
- Guide and counsel for carrier choice.
- Stimulate self learning ability.
- Enhance enrollment and examination process.
- Assist in research activities.
- Reinforce for cognitive learning.
- Development of life skills.
- Develop aesthetic sensibility.

National mission on ICTs in Education (NMEICT), a programmed of MHRD, established in 2009, along with the Indian institute of Technology (IIT) Mumbai is involving in the making of educational videos called spoken tutorials for school students. Like that consortium for educational commission (CMC) of Government of India has a central responsibility of all the educational video programmed which are created by the educational multimedia research center established by UGC in the universities and institutions of higher education all over the country. The media library has a big collection of 20000 educational video programmed and e-contents.

The University Grants Commission (UGC) is encouraging the development of e-contents for all the subjects. Teachers can also use the online courses like modular object-oriented Dynamic learning environment (MOODLE) and massive open online course to develop their ICT based lessons.

1.6 Pedagogy of Teacher Education

Pedagogy of teacher education is based on the view that the teaching of teaching requires specialist skills, knowledge and abilities that need to be recognized, developed, and refined by teacher educators as they become more expert at teaching about teaching.

1.7 Innovative Pedagogical Strategies

There are various innovative pedagogical strategies that a teacher needs to use in their classrooms and out of classrooms (Both Online and Offline; Synchronous and Asynchronous):

- Team Teaching.
- Discussion method.
- Cross over learning.
- Based on learning theories.
- Incidental learning.
- Conceptual learning.
- Role playing.
- Creative teaching.
- Focused learning.
- Concept mapping.
- Expert group method.
- Context based learning.
- Assessment based learning.
- Immediate feedback learning.
- Based on the learners nature.
- Learner centered.
- Independent projects.
- Peer tutoring.

Teacher should be involved in the development of specialized techno-pedagogical skills through the use of information and communication technology (ICT) in order to ensure their relevance and efficiency. A thorough understanding of the consequence of technology adaptation and use should be included in short and long term planning where knowledge is lacking.

A publicity campaign with greatly enhance the impact of comprehensive ICT-based pedagogical skills training.

1.8 Need for Integration of Technology and Pedagogy

Due to the rapid change in the field of information and communication technology in teaching learning process. Teacher is changing there teaching style in context of teaching -learning knowledge. In the present context, ICT play a very significant role in Education to various field. The use of information and communication technology to improve the whole teaching -learning process. Information and communication technology are rapidly change qualitatively and quantitatively in teaching -learning process. ICT is a potentially powerful tool that can offer unprecedented opportunities to revolutionize ways of teaching and learning and shift the process from being teacher centered and learner centered. The effectiveness of information and communication technology depends upon the various technological components to use teacher in the classroom and teacher should to provide quality education; teachers are gain knowledge technology and Pedagogy to Integration both them in the classroom. The use of technology in a part of instruction and teaching-learning system. Viewing technology integration from a wide perspective will provide teachers with the necessary foundation to implement technology in teaching -learning process.

Technology integration is a complex process. The activities includes planning the lesson, instructional objective/ behavioral objective or teaching objectives, selection of teaching materials, learning style of the learners, assessment and evaluation is a whole process of teaching-learning situations. The integration of techno-pedagogy is essential to facilitate learning, fill learning gap, learning difficulties of teachers and students, assess learning process and evaluate learning outcomes.

1.9 Challenges to use Techno-pedagogy knowledge in teaching -learning process:

In the present day situation, challenges of techno-pedagogical knowledge in teaching process very difficult. Techno-pedagogy enhance better education rather than simple education but there are difficult challenges –

1. **Lack of Training:** Today's teacher education institution lack to provide techno-pedagogy skill or knowledge. In-service teacher education should not trained in techno-pedagogical skill develop and use.
2. **Lack of knowledge about information and communication technology:** In, present context, many teachers are lack to use ICT in classroom. Teachers are not trained in ICT skills. So teacher's knowledge and student's knowledge are lack in Techno-pedagogical context.
3. **Lack of instructional materials:** Teacher should not provide appropriate information and communication technology related materials because many teachers don't understand ICT.
4. **Lack of classroom infrastructure:** Teachers are lack to use various ICT tools and materials. In classroom teachers lack to use proper computer, projectors, screen will become a hurdle to discharge technology based instruction.
5. **Lack of technical help:** A single teacher might not be competent in handling each hardware further so mores as computer code half where as integration technology in teaching -learning method. He or she may want some technical help from somebody world health organization is technically compliant. All the academic establishments might not have this facility. In such a state of affairs teacher becomes reluctant to use technology in teaching.
6. **Lack of support and co-ordination:** There will be several frictions between academics with techno-pedagogical talent and academics will not them. Such friction leads to conflicts among departments and directors. Not each management permits academics to experiments with their students. In such things academics feel demotivated and discouraged.
7. **Power problems and property problems:** The power outages and fluctuations dampen the potential impact for the utilization of techno-pedagogical talent. It becomes the reason for injury of operating PC and alternative equipment's that support the techno-pedagogical frame.

Internet property is that the biggest challenge of gift day. Even if the network suppliers square measure operating round the clock to mend this comment still it prevails as a challenge for discharging technology primarily based education.

1.10 Improvement of Techno-Pedagogy in Teaching

The challenges two faced by the academics to with success integrate technology and Pedagogy thereby enhancing their techno-pedagogical talent may be annihilated by adopting following suggestions –

1. **Correct coaching facilities:** Both pre-service similarly as in-service coaching must be provided to the academics to develop techno-pedagogical talents. There is and the spot want of identification of techno-pedagogic skills and coaching the pupils academics on these skills at various levels of teacher education – workshop, seminars, conferences, webinars must be organized alone to encourage the academics to become techno-pedagogues instead of simply pedagogues.
2. **Positive perspective towards technology:** The perspectives of academics may be a major enabling/ disabling think about the adaptation of the technology. The academics with positive attitudes towards the technology feel more leisurely whereas mistreatment it and that they typically incorporate it into their teachings activities. Therefore academics should amendment their views and may be showing emotions and mentally able to settle for the very fact that techno-pedagogical talent is extremely necessary.
3. **Enhance ICT skills:** Having sound information regarding data and communication technology is incredibly essential to develop techno-pedagogical skill. It includes information regarding each hardware similarly as code

elements and skills to use them. ICT skilled development may be a continuous long method of non-public growth.

4. **Provision of Technical help:** Educational establishments ought to create provision for technical help to academics. Establishments will appoint a full time or part time employee who is technically sound, capable of affiliating the academics time to time and sound and supply help once ever needed.
5. **Support and co-ordination:** There ought to be correct understanding between all the teaching staffs and head of the establishment. The management should promote technology based mostly education and permit academics to experiments with technology by providing all the resources that's needed that successively strengthens techno-pedagogical talent.
6. **Addressing property and power problems:** Institution ought to have facilitates of inverters or ups thus on give interrupted power provide with in the field. There should be Wi-Fi facility with in the establishment and speed of web ought to be in acceptable vary.

II. CONCLUSION

The use of technology in pedagogy is a critical aspect in the development of a hybrid approach to meta-teaching. The Indian government has established the National Curriculum Framework (NCF) in 2005 to emphasize on giving connectivity, valuable and helpful content and low cost computing strategies and equipment's to all the higher education institutions. But, the cultural, socio-economical, time and geographical barriers abstract to the techno-pedagogical practice. Now, the situation is slowly changing and most of the teachers and the students of higher education are using ICT for their teaching-learning process. All the teachers are willing to use techno-pedagogical instructions; the quality of education will be enhancing very soon.

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