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TECHNO-PEDAGOGIC SKILL AMONG THE TEACHERS OF ECONOMICS AT SECONDARY LEVEL

Rizwan Ali[1], Dr. Kartar Singh[2]
[1]*Research Scholar, Faculty of Education, Department of Teacher Training and Non formal Education (IASE), Jamia Millia Islamia, New Delhi.*
[2]*Professor, Faculty of Education, Department of Teacher Training and Non formal Education, (IASE), Jamia Millia Islamia, New Delhi.*

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ABSTRACT
Teachers of economics must incorporate techno-pedagogic abilities in the quickly changing educational context. These abilities let teachers make better use of technology to improve economic theories and concepts, making them more approachable and interesting for learner engagement..In the research methodology, part of the paper, a self-administered questionnaire was used in a cross-sectional study design to gather data from the participants.Convenience sampling was used to obtain the answers from the teachers of economics at secondary level in South East Delhi. School.findings of the study, 90% of economics teachers have received formal training on technology integration in their classroom.90% of teachers feels confident while using technology in teaching.82% of teachers feels that use of technology has improved the students' engagement in their economic classes.

KEYWORDS: *Techno-Pedagogic, skill, Economics Teacher, Secondary Level*

INTRODUCTION
The Greek terms "paidos" (child) and "agogos" (leader) are the source of the English word "pedagogy," which means "to lead the child." The art of teaching or a teaching strategy is referred to as pedagogy. The academic field of pedagogy studies the theory and practice of teaching and its influence on students' learning. By taking into account learning theories (understandings of students and their needs, and the backgrounds and interests of specific students), pedagogy informs teacher about their actions, judgments, and teaching tactics. Pedagogy encompasses the ways in which an educator engages with learners from diverse intellectual, social, cultural, and economic backgrounds. The broad goal of pedagogy is the development of human potential; the specific goal is the acquisition and transfer of skills.

The context, surroundings, and prior knowledge and experience of the learner, along with the learning objectives that the teacher and student have established, all influence the instructional tactics that are used. Making the topic more relevant and interesting for pupils can be achieved by talking about current economic events and policies (Teachers Institute, 2023).

The term "techno-pedagogy" describes the application of scientific ideas and modern technology to classroom activities, particularly instruction, assessment, and learning. Students have the option to learn with their teachers rather than just from them thanks to technology in the classroom.

Technology has an impact on the teaching and learning process in a number of ways, including as a tutor, a teaching instrument, and a learning tool. Because of modern technologies, teaching now requires a whole different set of abilities than it did ten years ago (Chinelo, 2021). Teachers can effectively integrate technology, pedagogy, and subject matter with the use of a platform called techno pedagogy. Techno pedagogy is the term for electronically mediated courses that combine technology use with strong pedagogical concepts of teaching and learning. The idea of techno-pedagogical competency is based on the planning, implementation, and evaluation of processes based on pedagogical and technology components in order to improve the efficiency of the teaching process (Niess, 2005).

To improve the quality of education and better equip students for the challenges of the twenty- first century, educators in India must acquire techno-pedagogical abilities, especially in the secondary economics classroom. .The effectiveness of students' learning and their overall learning experience are significantly impacted by the way technology is employed in pedagogy. For the purpose of improving education quality and equipping students for the challenges of the twenty-first century, it is imperative that teachers in India acquire techno-pedagogical abilities, especially in the area of economics at the secondary level.

Studies have indicated that the use of technology by economics professors is significantly influenced by TPACK (Technological Pedagogical Content Knowledge). This shows that teachers will be more successful using technology in the classroom if they are skilled at fusing it with their pedagogy and subject matter. (Auliya et al., 2023).

Students' whole educational experience and learning outcomes can be greatly impacted by the incorporation of technology into teaching. Creating state-of-the-art virtual learning

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environments that blend superior teaching with technology is the current trend.

To incorporate technology into pedagogy in both traditional and virtual classrooms, teacher educators are developing new, outcome-based practices, researching technology, and improving their technical proficiency. The necessity for technology use will only grow as it develops at an accelerated rate, which is causing many aspects of human society to undergo fast transformation. (Yan, 2021).

The role of EdTech in the global education ecosystem is becoming increasingly significant. Artificial intelligence and other cutting-edge innovations are driving the industry's significant expansion. A variety of outcomes, such as student achievement and the growth of socioemotional skills, are being impacted by this trend, which is changing the educational system. (World Economic Forum, 2024).

These growing patterns reflect the evolving techno-pedagogical skills of secondary economics teachers in India. They highlight the increasing importance of group learning, the increasing use of technology in teaching, and the impact of new technologies on the educational landscape.

As technology integration in education becomes more common, teaching and learning approaches are being transformed. The ability of Indian secondary economics instructors to use technology to enhance instruction and student learning is the main emphasis of this study, which examines their techno-pedagogic skills. There are numerous potential benefits to integrating technology into secondary economics teaching in India. We can address the problems and invest in teacher education and professional development to assist build a more efficient and digitally enabled learning environment for economics students.

The quality and high standards of the Indian educational system are well known. Most prestigious universities and other educational institutions employ innovative techniques, take a creative approach, and carry out in-depth study in a variety of subjects. For children in every part of the country to have access to high-quality education, internet-connected cell phones are just as important as all other electronic equipment. Even today's children watch their favorite cartoons, learn image rhymes, and play games on their cellphones. Modern electronic devices are used and appreciated by adults and students of all ages. Additionally, there is a paradigm shift in how educators and parents see digital learning.

Scientific and technical developments have made it possible for teachers and students to use low-cost computers, laptops, and mobile phones in the classroom. Nowadays, students are receptive to learning using internet resources. To implement changes in the Indian educational system, a variety of technologies are used. The Indian government is also determined to increase the country's digital literacy.

In order to communicate effectively, instructors, teacher-educators, and student-teachers must be able to use word processing, spreadsheets, PowerPoint presentations, online discussion forums, email, and the ability to download and store content from the internet. Therefore, curricula for teacher education programs should cover the fundamentals of computers and how they are used in the classroom.

Significant Elements of Techno-Pedagogical Knowledge for Instructors of Economics

Digital literacy means the knowledge or ability to use technology appropriately, including online platforms, for an effective teaching and learning process. On the other hand, **online resources** refer to the materials and various tools available through the internet.

Curriculum integration with technology means the incorporation of technology or technological skills into the teaching–learning process in the classroom to maximize educational outcomes. Technology can be used to develop lesson plans, design assessments, and enhance student engagement.

Data Management: With the help of data management, different concepts can be easily understood. Data analysis and economic modeling can be performed using various software tools such as Microsoft Excel and Google Sheets. Data visualization can also be done, which makes difficult concepts easier to grasp. The interpretation of graphs, charts, and other visual aids helps learners understand economic data more effectively.

Teaching Strategies: Using online teaching strategies can be greatly helpful for student learning, especially through tools like Google Classroom, which are useful for providing distance education. There are several internet resources that can be used, such as polls, discussion forums, and quizzes, to engage students effectively.

Technology Integration:incorporating technology in teaching and learning means the effective use of digital tools and various resources to enhance the educational process. Different technologies can be employed, such as tablets, online platforms, smart boards, and other educational software, in the classroom to improve teaching efficiency and learner engagement.

Assessment and Feedback: Technology is essential for enhancing evaluation and feedback in secondary economics instruction. Instructors can construct quizzes, examinations, and assignments that can be automatically evaluated using digital tools like Google Forms, Microsoft Teams, and online learning platforms. This ensures correctness and saves time. Assessments are made more interesting and learners can study important economic ideas in an enjoyable way with the use of interactive applications like Quizizz, and Kahoot.

Recent developments in techno-pedagogical competencies among secondary school teachers in the subject of economics are making classroom instruction more enjoyable for both teachers and students.

Here are some examples of how these innovations are changing the field of education and the manner in which that technology is used in the classroom.

- Combining Technology and Learning through Collaboration
- Advancing technologies' effects.

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- Transition to Cutting-Edge Virtual Learning Environments
- EdTech's expanding role in education.

These new trends show how the techno-pedagogical competencies of secondary economics teachers in India are changing. The expanding importance of group learning, the growing use of technology in pedagogy, and the effects of new technologies on the educational environment are all emphasized.

Constraints and Considerations

Infrastructure Issues: Students and educational institutions have differing degrees of accessibility to digital technology and dependable internet.Teachers need to pursue professional development and training in order to stay up to date with changing educational techniques and technological advancements.

Content Relevance: Making sure that technology use complies with the curriculum and educational requirements set forth by educational boards.

Equity Concerns: Minimizing inequalities in access to technology and guaranteeing that every learner gain from educational advancements.

LITERATURE REVIEW

The efficiency of secondary school teachers' techno-pedagogical abilities in their online instruction is examined in this study. Forty-two teachers of secondary schools in the CBSE and ICSE make up the sample.The study used Sibichen's (2011) "Techno-Pedagogical Skill Assessment Scale" in a descriptive survey approach to gather data. Another method used to acquire data was structured interviews.The findings showed a somewhat positive relationship between successful online instruction and techno-pedagogical abilities.With regard to their successful online instruction, secondary school teachers' high and low levels of techno- pedagogical proficiency differ significantly. The study revealed that the COVID-19 epidemic had a favorable effect on secondary school teachers' techno-pedagogical skills.Setua,C.(2022).

Educators frequently lack the necessary skills and knowledge to effectively implement technology-integrated teaching methods (Barbour et el., 2013). Another difficulty with technology use in school is that it might hinder learning (Kurniawan et al., 2021).

The COVID-19 epidemic has altered education in a number of ways. Learning that ought to take place in the classroom is compelled to be done remotely or at home. In light of these circumstances, technology in education supports the teaching and learning process to a sufficient extent (Starkey et al., 2021). Moreover, Covid-19 pandemic brought about quick changes that made it difficult for teachers to adapt. Teachers found it difficult because they were still unaccustomed to incorporating technology into the classroom (Tafano & Saputra, 2021).

Since technology integration has been demonstrated to increase student achievement and involvement in the learning process, its success in the classroom is crucial (Ghavifekr & Rosdy, 2015). In actuality, a number of factors affect how well teacher technology integration goes. The implementation of teacher technology integration in the classroom places a strong emphasis on the attitudes, abilities, and knowledge of teachers toward the use of technology (Roussinos & Jimoyiannis, 2019). Meanwhile, when creating technologically enhanced learning environments, educators must take into account their views of instructional choices (Abbitt, 2011). Integrating information and communication technologies (ICT) will improve how economics is taught and learned in classrooms (Aziz, 2020). Numerous studies have demonstrated how the use of ICT in the classroom improves students' academic performance and helps them adapt to the digital environment in which we live (Khan, 2020 & Kharbach, 2023).A study conducted at a secondary school teachers from Tamil Nadu, India demonstrated that the majority of instructors in higher secondary schools had an average perception of their techno-pedagogical abilities and shown concern when it came to using instructional aids (Bala and Tao, 2018). Rastogi and Malhotra (2013) stated that teachers become alienated from using technology when there is a mismatch between their pedagogical culture and their techno-centric cultural mindedness. In the Cuddalore district of Tamil Nadu, Jeyaraj and Ramnath (2018) conducted a thorough investigation on the technological pedagogical competencies of teacher educators in connection to a few chosen variables, and found that the teacher educators' TPS varies depending on the gender, computer courses taken, and technology use.

Mwakisole Kennedy, et al., (2018) have assessed the feasibility of implementing e- Learning systems in a cloud-based infrastructure for secondary schools in Tanzania, and found that it is possible for Tanzanian secondary schools to implement e-learning in the cloud. According to this report, Tanzanian secondary schools are using e-learning tools to improve the teaching and learning process.

OBJECTIVE OF THE STUDY

The lack of techno-pedagogy skills among teachers has drawn the attention of numerous researchers. Nevertheless, to the best of our knowledge, little to no research has been done on how to improve teachers' ICT skills in order to teach economics. Therefore, the specific objectives of this study are as follows;

- To analyse the use of technology by the teachers in their classes.
- To assess the techno-padagogical skill of the teachers

RESEARCH METHOD

In the research methodology part of the paper, a self-administered questionnaire was used in a cross-sectional study design to gather data from the participants. Sample size for the study is 50. Convenience sampling was used to obtain the answers from the teachers of economics at secondary level in South East Delhi Govt. School. The present study also aimed at identifying the level of techno pedagogical skills among the secondary level teacher educators.

Questionnaire

The tool techno pedagogical skill was constructed by the researcher with the consultation of research supervisor and

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subject experts. All the questions were closed-ended in nature.

Section 1: Technology Usage in Teaching

S No	Questions	Yes	No
1	Have you received any formal training on technology integration in education?	(45)90%	(5)10%
2	Do you often use technology in your economics classes?	(35)70%	(15)30%
3	Do you use techno-pedagogic skill to do assessment of classroom?	(32)64%	(18)36%
4	Do you face challenges in using technology in teaching?	(42)84%	(08)16%

Section 2: Techno-Pedagogic Skills

S No	Questions	Yes	No
1	Do you feel confident in using technology for teaching economics?	(45)90%	(5)10%
2	Do you integrate technology into lesson plans?	(46)92%	(4)08%
3	Do you use online learning platforms (Moodle, Google Classroom)?	(33)66%	(17)34%
4	Do you feel that your techno-pedagogic skills are adequate for meeting the needs of your students?	(47)94%	(3)06%
5	Do you need support/resource to improve your techno- pedagogic skills?	(35)70%	(15)30%

Section 3: Impact of Technology on Teaching and Learning

S No	Questions	Yes	No
1	Has the use of technology improved student engagement in your economics classes?	(41)82%	(09)18%
2	Do you believe that technology has enhanced student learning outcomes in economics?	(48)96%	(2)04%
3	Does this technology has impacted your teaching method positively?	(47)94%	(3)06%

FINDINGS

This part of the paper manifests that technology usage in economics teaching is widely prevalent (Section-1 of the questionnaire). Wherein, 90% of economics teachers have received formal training on technology integration in their classroom. While 70% of teachers found to be using technology in their classes. Moreover, 62% of economics teachers uses techno- pedagogic skill to do assessment of their classroom. Furthermore, only 16% of teachers were facing difficulties in using these technologies in their classroom.

Section-2 of the questionnaire specifically discusses the techno-pedagogic skills among the teachers of economics at secondary level. Wherein, 90% of teachers feels confident while using technology in teaching. And 92% of teachers integrate techno-pedagogy skills in their lessons to teach the students. In terms of using online platforms (Moodle, Google Classroom), 66% of teachers responded in "yes". Moreover, 94% of teachers feel that the level of their techno- pedagogic skills is enough to teach the students. Furthermore, 70% of teachers need technological support and resources to improve their techno-pedagogic skill.

Section-3 of the questionnaire discusses the impact of technology in teaching and learning. Wherein, 82% of teachers feels that use of technology has improved the students' engagement in their economic classes. 96% of teachers believes that using technology in their classes has enhanced the learning outcomes of the students, because of an imparting an increased level of understanding among the students. Moreover, 94% of teachers feel that using technology has positively impacted their teaching skills.

CONCLUSION

Finally, improving the quality of education and equipping students for the demands of the twenty-first century in India requires economics teachers at the secondary level to acquire online learning platforms. The educational landscape can be greatly impacted by the incorporation of technology into pedagogy, as long as the associated issues are addressed and resources are made available.There are certain future directions that we should keep in mind to remain up to date with technology. These are as follows:

Training Programs: Teachers should regularly attend workshops and training sessions to improve their techno-pedagogical abilities and stay current with technological advancements.

Investment in Infrastructure: To enable effective tech incorporation, schools and other educational institutions should make investments in the necessary equipment and support system.

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