



A COMPARATIVE ANALYSIS OF TEACHER'S COMPETENCY IN TECHNO- PEDAGOGY

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Abstract: Competency helps to perform your work/job effectively. Competency is human quality, like-collaborative skills, knowledge and skills. An effective digital pedagogy thus starts not with a static list of tools, but with fundamental learning goals and strategies, to which appropriate technology is added to strengthen student outcomes and objectives. Technological awareness expresses the knowledge, experience, comfort and skills needed to use basic technology. In the 21st century, it is essential for teachers because today's world is changing rapidly and the education sector is experiencing these changes, especially in media. The overarching purpose of this research was to find out to what is the competency of teacher to use the technology in teaching. A representative sample of 90 higher secondary school teachers (50 in the city and 40 in the village side) was taken, and **Teacher's Techno- Pedagogical Competence Scale** developed by **S. Rajshekhar** and **K. Sathiyaraj**, was used to collect data. The scale consists 40 items divided into four category- I. Technology in preparation for teaching, II. Technology in providing motivation, III. Technology in presentation, IV. Technology in evaluation. After collecting or analyzing the data, the researcher found that there is no significant difference between Techno – Pedagogical Competency of higher secondary school teachers based on gender (male and female) and region (urban and rural).

Index Terms – Technology, Digital Pedagogy, Technology and Pedagogy.

I. INTRODUCTION

Digital pedagogy focuses specifically on the use of technology to break down learning barriers and enhance students' learning experiences. By definition, its existence dates back to the earliest use of digital tools in classrooms – however, larger awareness of the need for digital pedagogy has emerged only in the last decade or so, in recognition of the changing relationship between students and computers, handheld devices, social media, and more. For instance, according to one 2013 study, today's undergraduate students use their computers an average of 123 minutes per day – yet spend only six minutes per day on email [1]. This changing

portrait of student habits points towards a serious need for critical approaches by instructors regarding the use of technologies to engage their students, regardless of a class' subject or mode of instruction. An effective digital pedagogy thus starts not with a static list of tools, but with fundamental learning goals and strategies, to which appropriate technology is added to strengthen student outcomes and objectives. The contemporary visions revealed how learners have a tendency to use Technology and how their learning influences when using Technology, it has been exposed that the use of digital technology and students' interactivity and learning is growing. (Nagasubramani, 2018). Technology is the application of knowledge to reach practical goals in a specifiable and reproducible way. The word technology may also mean the product of such an endeavour. The use of technology is widely prevalent in medicine, science, industry, communication, transportation, and daily life. Technologies include physical objects like utensils or machines and intangible tools such as software (Wikipedia, 2022). Competence is a set of demonstrable characteristics and skills that make it possible to do a job and improve its effectiveness. Competencies are not skills, although they are similar. Skills are learned, but competencies are human qualities - collaborative skills, knowledge and skills. Miller (1989) classified science literacy into three levels as (1) understanding the scientific methods, (2) understanding the scientific and technological basic terms and concepts, and (3) understanding the effect of science and technology on society (Li,1999). Technology trend awareness refers to the skill of an individual to be aware and mindful of new and popular technology that has been gaining widespread acceptance across concerned industries or markets (Rahimah et al., 2018). The present world is changing rapidly and the field of education is experiencing these changes in particular as it applies to Media Services. The old days of an educational institution having an isolated audio-visual department are long gone! The growth in use of multimedia within the education sector has accelerated in recent years, and looks set for continued expansion in the future. Teachers primarily require access to learning resources, which can support concept development by learners in a variety of ways to meet individual learning needs. The development of multimedia technologies for learning offers new ways in which learning can take place in schools and the home. Enabling teachers to have access to multimedia learning resources, which support constructive concept development, allows the teacher to focus more on being a facilitator of learning while working with individual students. Extending the use of multimedia learning resources to the home represents an educational opportunity with the potential to improve student learning. The elements used in multimedia have all existed before.

Techno-Pedagogical Competency for Teachers:

Our understanding of changing digital technologies helps not only to improve the quality of our interactions with students, but also helps us identify disconnects between students and library technologies that leave room for improvement in our approach to teaching and outreach. With more courses being offered in hybrid or online modes, librarians need to be ready to use appropriate technologies to teach and engage learners outside the traditional classroom. Academic librarians are instructors in their own right and provide important connections for students between research, university services, and digital initiatives. As faculty engage in digital pedagogy and become invested in new digital tools, they may expect librarians to be able to use them to communicate or collaborate outside the classroom. Educational institutions, teachers and parents are faced

with students who use computers, videos, mobile phones, watch visual and audio broadcasts on digital platforms, which transmit images, sounds and data almost every day in their daily life and are accustomed to such technical products. every day (Cavdar, 2012). Assuming that teachers are unable to develop their skills in using existing technological products under existing conditions, they face various difficulties in responding to the needs and desires of students (Aksoy, 2003). If teachers' ignorance of technical terms is added to this situation, the number of problems increases and their solution becomes more difficult. Developing technology awareness at all stages is important for all students. In 2008, Ahmad conducted a study to build a technology education program that would increase technology awareness and skills to deal with modern technology applications. In creating the program, the researcher used a cognitive test, a list of skills needed to meet modern technical requirements and a list of current technical applications. Students tested the program to determine its effectiveness in increasing their technological awareness and skills in engaging with modern technological applications in high school. The study looked at the impact of the proposed program on awareness, and on students' cognitive abilities and on their ability to handle modern technological applications after applying to the program. The study recommends the introduction of a technical education curriculum that would enable students to connect with the educational environment and the business market, and to provide highly qualified teachers to teach this curriculum. With the advancement in technology and the rise of remote learning, classrooms are being remodelled and redefined in a number of ways to fit the evolving needs of modern digital learners. The learning environment is more dynamic than ever before, and as a result, today's learners are learning in a way that's very different from how our educational system was originally designed. Technology allows educators to remove the physical barriers of the classroom, offering students a way to connect the curriculum with the real world and those areas of academic focus that can truly enrich the student experience. Many educational tools offer a variety of features that promote collaboration. Technology also supports a variety of learners. Because no two students learn in the same way. But with the right educational tools, educators can achieve a diversity of learning styles and experiences. According to Andrade et al. (2008), multimedia technologies are a good way to learn complex subjects. Students do better with this technology. Due to the use of multimedia, computers are increasingly used in education (Park and Hannafin, 1993).

OPERATIONAL DEFINITION:

- **Techno-Pedagogical Competency:** The researcher has defined this term as the teacher's efficiency in all the dimensions included in the *Techno-Pedagogical Competence Scale*.
- **Teacher:** In the presented study, teachers have been defined as Higher Secondary School Teachers of government schools of Lucknow district.

STATEMENT OF THE PROBLEM:

A Comparative Analysis of Teacher's Competency in Techno-Pedagogy.

OBJECTIVES OF THE STUDY:

1. To compare the Techno-Pedagogical Competency of among Higher Secondary School Teachers on the basis of gender (male and female).

- To compare the Techno-Pedagogical Competency of among the Senior Higher School Teachers on the basis of locality of school (urban and rural).

HYPOTHESIS:

- There is no significant difference between Techno-Pedagogical Competency of among Higher Secondary School male and female teachers.
- There is no significant difference between Techno-Pedagogical Competency of among the urban and rural Higher Secondary School Teachers.

METHODOLOGY:

The investigator randomly selected the urban and rural area school and applied the incidental sampling method of research for the data collection from teachers. The study sample consisted of 90 higher secondary school teachers who working in government school. In this study, investigator used *Teacher's Techno-Pedagogical Competence Scale* which developed by S. Rajshekhar and K. Sathiyaraj. It consists of 40 items having mainly four dimensions- technology in preparing for teaching, technology in providing motivation, technology in presentation and technology in evaluation. This scale administered on higher secondary class teachers. This study was limited to Lucknow district and was conducted only on government higher secondary school teachers.

ADMINISTRATION AND SCORING:

The Teacher's Techno-Pedagogical Competence Scale administered to use incidental sampling method to collect data, which both includes male/female and urban/rural school teachers. They were assured that no information disclosed to anyone consequently they give their response without any fear.

STATISTICAL TECHNIQUES USED:

The data was analysed statistically by using Mean, Standard Deviation and t-test to access the Techno-Pedagogical Competency among higher secondary school teachers on gender and area basis.

ANALYSIS AND INTERPRETATION OF THE DATA:

In educational research, this step is heart of research to analysis the collection of data and interpretation of the collected data. It deals with nature of score of data collected in numerical way like mean, standard deviation and t-test.

Table no.1: Techno-Pedagogical Competency of among higher secondary school teachers:

Sr. No.	Scores	Frequency	Level of Awareness
1	33-40	3	High
2	25-32	12	Above Average
3	17-24	60	Average
4	9-16	13	Below Average
5	0-8	2	Low

The result of this table and figure show that if the teachers have scored between 33 to 40, they have high techno-pedagogy competency. 12 teachers have scored between 25 to 32, that means above average

competency. 60 teachers have scored between 17 to 24 which mean average competency. 13 teachers have scored between 9 to 16 that represent the below competency about techno-pedagogy. 2 teachers scored between 0 to 8 that means 2 teachers has low level of competency about techno-pedagogy. We can say it shows that there is average competency about techno-pedagogy in among teachers.

Table no. 2: t-test for Techno-Pedagogical Competency of among Male and Female teachers:

Groups	N	Mean	Standard Deviation	t-test	Remarks
Male Teachers	48	22.06	4.56	1.23	Not Significant
Female Teachers	42	20.62	6.17		

This table of result shows the competency of male and female teachers in techno-pedagogy. As can be seen, differences in competency mean of male and female teachers is not significant, because the result of the t-test show there is no significant difference in competency between male and female teachers of higher secondary school. The t-test for this particular hypothesis states there is no significance difference between Techno-Pedagogical Competency of among male and female teachers. Therefore, we must accept the null hypothesis.

Table no. 3: t-test for Techno-Pedagogical Competency of Urban and Rural school teachers:

Groups	N	Mean	Standard deviation	t-test	Remarks
Urban	50	23.32	5.78	3.86	Significant
Rural	40	18.73	5.48		

As can be seen in Table 3, the t-test for this particular hypothesis states there is significance difference between Techno-Pedagogical Competency of among the urban and rural Higher Secondary School Teachers. Table shows the mean score difference of competency in techno-pedagogy among urban and rural school teachers is significant. Thus, the null hypothesis is rejected and alternative hypothesis is accepted.

MAJOR FINDINGS:

- 60 teachers have average competency about techno-pedagogy.
- Differences in Techno-Pedagogical competency mean of male and female teachers is not significant.
- There is a difference between Techno-Pedagogical Competency of among the urban and rural Higher Secondary School Teachers.

CONCLUSION:

In the study overall result shows that, there is no significant difference between Techno-pedagogical competency of higher secondary school teachers on the basis of gender (Male and Female), but there is significant difference between Techno-pedagogical Competency of teachers on the basis of locality (Urban and Rural). This study shows that on the basis of gender we cannot say that there is difference in techno-

pedagogical competency level. Because, difference based on area of school is significant. It can be said that there is still a lack of technology in rural areas. Whatever may be reason, but lack of technology can be a major reason. There is need to put more emphasis on technological training in urban as well as rural area schools, because training may be a reason of difference in competency level of teachers.

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