

# A study on Techno-Pedagogical Skills among Teachers of Government and Private Secondary Schools

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## **Abstract**

The application of technology in a systematic and organized way to enhance the level of education is known as educational technology. It involves a structured method for examining how the process of education, is conducted and evaluated by utilizing modern teaching technologies in education, materials, methods, and the organization of relationships, including how individuals interact in the educational setting. Techno pedagogy is a term used for courses that blend effective teaching and learning strategies with the use of technology. The objective of this study is to compare expertise of teachers in using technology for teaching in both Government and Private schools of Kottayam District, Kerala. The study selected a total of 200 Secondary School teachers, with 100 from Government Schools and 100 from Private Schools, using random selection. The research employed a descriptive survey method. The findings reveal that the average Techno-Pedagogical Skills of Private Secondary School Teachers exceeds that of Government Secondary School Teachers. This suggests that the Techno-Pedagogical Skills of Private Secondary School teachers is superior due to the better facilities provided in Private Schools compared to Government schools. Additionally, the mean value of Techno-Pedagogical skills is higher for both Government and Private Secondary School male Teachers compared to female teachers, both types of schools. Male teachers in both Government and Private Secondary Schools demonstrate better Techno-Pedagogical skills compared to their female counterparts. The average Techno-Pedagogical Skills of teachers in urban Government and Private Secondary Schools is greater than that of the teachers in rural Government and Private Secondary Schools. Therefore, it can be inferred that urban Government and Private Secondary School Teachers possess superior Techno-Pedagogical Skills in comparison to their rural counterparts due to the availability of more facilities in urban schools.

**Key words:** Techno pedagogy, Pedagogical Skills, Technological skill, Secondary School.

## **INTRODUCTION**

In today's society, technology plays a crucial role. It's becoming more and more essential in the education sector. Technology brings about major changes that are key to enhancing productivity. It's useful in teaching and learning processes. Recent advancements in technology, transformed the educational landscape beyond the classroom, making it appealing and captivating for students compared to traditional classroom environments. Technology introduces digital learning resources into classrooms, broadens the range of courses available, and boosts student involvement and motivation. The use of educational technology in the classroom is on the rise. This leads to a surge in learning and the acquisition of new knowledge, particularly through mobile devices. The younger generations are already adept at using these technologies, which are crucial for enhancing children's cognitive abilities. The integration of educational technology increases the abilities and cognitive

qualities. Techno Pedagogy is a blend of teaching methods that incorporates information and computer technology into the learning environment. The word ‘pedagogy’ is about the techniques of teaching, while ‘techno’ refers to the skill of creating things by hand, originating from the Latin word "Texere." Essentially, techno pedagogy is the combination of art and science in teaching, utilizing technology as a tool.

### **Role of technology in education**

- i. Increasing linguistic abilities.
- ii. Improving teaching learning methods.
- iii. To develop study materials.
- iv. Initiating multi-grade instruction.
- v. Designing particular pedagogy.
- vi. Encouraging self-learning ability.
- vii. Strengthen cognitive learning.

### **Techno-Pedagogic skills**

- Assessing the potential and limits of technologies for learning.
- To carry out a need analysis to introduce technologies in a pedagogical order.
- Handle basic tools and applications, and resolve simple technical problems.
- Design appropriate tasks in teaching.
- Planning for connections within and outside the classroom.
- Invest new and interactive technologies equivalence with the nature of the subject.
- Manage time and enhance the incorporation of technologies.

The skill of Techno-Pedagogy involves teacher’s skill in using appropriate technology effectively for teaching. Simply introducing technology to education is insufficient. It's crucial to ensure effective integration of technology. Technology alone will not drive change. How teachers integrate technology can potentially change the education process. Therefore, teachers' attitude and competence in implementing technology is essential. To become skilled in using educational technology, teachers need to familiarize themselves with the latest tools.

### **Statement of problem**

“A study on Techno-Pedagogical Skills among Teachers of Government and Private Secondary Schools”

### **Operational definitions**

**Technology-** Technology is related with innovation, the transformation of ideas into new and useful products or methods.

**Pedagogy –** Pedagogy is derived from two Greek words “Paidos” meaning child and “Agogos” meaning leading. It means “to lead the child”. Thus pedagogy is defined as the art and science of teaching children.

**Skill -** A skill is a set of defined behaviours that provide a guide to enable the identification, evaluation and development of the behaviours in individual.

**Pedagogical Skills -** Pedagogical skills is the ability and capabilities possessed by the teacher to make the teaching learning environment effective and productive thereby realizing the full potential of teacher as well as students for achieving the goals of education.

Secondary School – The school in which education is provided to students from class 8th to class 10th.

Government Secondary School – The secondary school which is being functioned by Government of concerned Kerala.

Private Secondary School – The secondary school which is being functioned by Private Management. Private Management is sole accountable for financial matters to run the school.

### **Objectives**

- To compare the Techno-Pedagogical Skills between Government and Private Secondary School teachers.
- To compare the Techno-Pedagogical Skills between male and female Government Secondary School teachers.
- To compare the Techno-Pedagogical Skills between male and female Private Secondary School teachers.
- To compare the Techno-Pedagogical Skills between Urban and Rural Government Secondary School teachers.
- To compare the Techno-Pedagogical Skills between Urban and Rural Private Secondary School teachers.

### **Hypotheses**

- There is no significant difference of Techno-Pedagogical skills between Government and Private Secondary School teachers.
- There is no significant difference of Techno-Pedagogical skills between male and female Government Secondary School teachers.
- There is no significant difference of Techno-Pedagogical skills between male and female Private Secondary School teachers.
- There is no significant difference of Techno-Pedagogical skills between Urban and Rural Government Secondary School teachers.
- There is no significant difference of Techno-Pedagogical skills between Urban and Rural Private Secondary School teachers.

### **Population and Sample**

Secondary school teachers working in Government and Private Schools of Rural and Urban areas of Kottayam District constitute the population of this study. In this study a random sample of 200 Secondary School Teachers are selected, of which 100 teachers each from Government and Private Secondary Schools. Out of these 200 teachers 100 are Male teachers and 100 are female teachers.

### **Delimitations of the study**

- In this study the sample of 200 Secondary School teachers are delimited.
- In this sample for the study is randomly selected from Kottayam District of Kerala state only.

### **Tool Used In This Study**

Teacher's Techno-Pedagogical Skill Scale by Dr. Revati N., developed in 2024 is used to find Techno-Pedagogical Skills of Secondary School Teachers.

## Statistical techniques used

Statistical techniques used in this study are Mean, Standard Deviation and t Value.

## Analysis and Interpretation of Data

t- ratio has been used to find out the difference of Techno Pedagogical Skills of Government and Private School Teachers. Comparison of the observed values with critical values at 0.05 and 0.01 revealed whether the results are significant or not.

**Hypotheses 1:** There is no significant difference of Techno-Pedagogical skills between Government and Private Secondary School teachers.

Table 1.1 Mean, S.D. and 't' values of Techno Pedagogical Skills of Government and Private Secondary School Teachers.

Variable	N	M	SD	DF	T Value	Level of Significance
Techno Pedagogical Skills Scale of Private Secondary School Teachers	100	137.87	7.55	197	10.14	Significant at both levels 0.05 and 0.0
Techno Pedagogical Skills Scale of Government Secondary School Teachers	100	132.66	6.52			

DF = 197, 0.05 = 1.97, 0.01 = 2.63

## Interpretation

Mean and Standard deviation of Techno pedagogical skills among Government and Private Secondary School Teachers is 13.87,7.55, 132.66 and 6.52 respectively. The calculated 't' value 10.15, is more than standard table value at both levels of significance at DF= 197; so first hypothesis is rejected. The Techno pedagogical skill mean value of Private Secondary School Teachers is more than Government Secondary School Teachers. So it can be concluded that Techno pedagogical skills of Private Secondary School Teachers is greater than Government Secondary School Teachers.

**Hypothesis 2:** There is no significant difference of Techno-Pedagogical skills between male and female Government Secondary School teachers.

Table 1.2 Mean, S.D. and 't' values of Techno Pedagogical Skills scale of male and Female Teachers of Government Secondary School

Variable	N	M	SD	DF	T Value	Level of Significance
Techno Pedagogical Skills of Male teachers of Government Secondary School	50	114.61	6.56	98	3.23	Significant at both levels 0.05 and 0.0
Techno Pedagogical skills of Female teachers of Government Secondary school	50	110.11	6.13			

DF = 98, 0.05 = 2.01, 0.01 = 2.63

### Interpretation

Mean and Standard deviation of Techno pedagogical skills among Male and Female Teachers of Government Secondary School is 114.61, 6.56, 110.11 and 6.13 respectively. The calculated 't' value 3.23, is more than standard table value at both levels of significance at DF= 98; so the second hypothesis is rejected. The Techno pedagogical skill mean value of Male teachers of Secondary School is more than female teachers of Government Secondary School. So it can be concluded that Techno pedagogical skills of Male Secondary School teachers is greater than female teachers of Government Secondary School.

**Hypothesis 3:** There is no significant difference of Techno-Pedagogical skills between male and female Private Secondary School teachers.

Table 1.3 Mean, S.D. and 't' values of Techno Pedagogical Skills scale of male and Female Teachers of Private Secondary School

Variable	N	M	SD	DF	T Value	Level of Significance
Techno Pedagogical Skills of Male teachers of Private Secondary School	50	129.11	6.99	98	2.79	Significant at both levels 0.05 and 0.0
Techno Pedagogical skills of Female teachers of Private Secondary School	50	125.13	7.19			

DF = 97, 0.05 = 2.01, 0.01 = 2.68

### Interpretation

Mean and Standard deviation of Techno pedagogical skills among Male and Female Teachers of Private Secondary School is 129.11, 6.99, 125.13 and 7.19 respectively. The calculated 't' value 2.79, is more than standard table value at both levels of significance at DF= 97; so the third hypothesis is rejected. The Techno pedagogical skill mean value of Male teachers of Secondary School is more than female teachers of Private Secondary School. So it can be concluded that Techno pedagogical skills of Male Secondary School teachers is greater than female teachers of Private Secondary School.

**Hypothesis 4:** There is no significant difference of Techno-Pedagogical skills between Urban and Rural Government Secondary School teachers.

Table 1.4 Mean, S.D. and 't' values of Techno Pedagogical Skills between Urban and Rural Government Secondary School teachers.

Variable	N	M	SD	DF	T Value	Level of Significance
Techno Pedagogical Skills of Urban Government Secondary School teachers.	50	115.98	6.62	98	3.62	Significant at both levels 0.05 and 0.0
Techno Pedagogical Skills of Rural Government Secondary School teachers.	50	109.45	6.44			

### Interpretation

Mean and Standard deviation of Techno pedagogical skills among Urban and Rural Government Secondary School teachers is 115.98, 6.62, 109.45 and 6.44 respectively. The calculated 't' value 3.62, is more than standard table value at both levels of significance at DF= 97; so the forth hypothesis is rejected. The Techno pedagogical skill mean value of Urban Private Secondary school teachers is more than Rural Private Secondary School teachers. So it can be concluded that Techno pedagogical skills of Urban Private Secondary school teachers is more than Rural Private Secondary School teachers.

**Hypothesis 5:** There is no significant difference of Techno-Pedagogical skills between Urban and Rural Private Secondary School teachers.

Table 1.5 Mean, S.D. and 't' values of Techno Pedagogical Skills between Urban and Rural Private Secondary School teachers.

Variable	N	M	SD	DF	T Value	Level of Significance
Techno Pedagogical Skills of Urban Private Secondary School teachers.	50	126.98	7.85	98	2.76	Significant at both levels 0.05 and 0.0
Techno Pedagogical Skills of Rural Private Secondary School teachers.	50	112.65	7.14			

DF = 98, 0.05 = 2.01, 0.01 = 2.76

### Interpretation

In this study the mean, S.D. of Techno Pedagogical Skills of Urban and Rural Private Secondary School teachers is 126.98, 7.85, 122.65 and 7.14 respectively. The calculated 't' value is 2.76, which is more than standard table value at both levels of significance at DF=98, hypothesis no. 5 is rejected. The mean value of Techno Pedagogical Skills of Urban Private Secondary School teachers is more than Rural Private Secondary

School teachers. It is finally concluded that Techno Pedagogical Skills of Urban Private Secondary School teachers is greater than Rural Private Secondary School teachers.

### **Educational Implications**

Major findings of this study indicate that the Private School Teachers are superior than Government School Teacher in Techno Pedagogical Skills because the facilities given in private schools are better than services in Government schools. Similarly the Techno Pedagogical Skills of male teachers and urban school teachers is superior than female teachers and rural school teachers. Therefore, this study play an important role to find out the reason behind the poor Techno Pedagogical Skills of Government school teachers. It directs to take strong steps to improve their Techno Pedagogical Skills This study also helps to decrease the obstacles to rise the Techno Pedagogical Skills of teachers.

### **Suggestions for Further Study**

The present investigation has certain limitations and the area of present study needs more clarifications. In this study, the investigator has selected random sample of 100 Government and 100 Private Secondary school teachers which can be increased. The investigator has selected only Kerala, another state may be selected. In this study, the investigator has selected one variable i.e. teacher's Techno Pedagogical Skills Scale, various other variables may be taken for further study. In this study, the investigator has used mean, S.D., 't' test, it is advised to use Analysis of Variance and Analysis of covariance in analysis and interpretation of data. In this study, the investigator has selected sample from other levels of education may be taken.

### **References**

- 1) Ersoy, M., Yurdakul, L. K. and Ceylan, B., (2016). Investigating pre-service teacher's TPACK competencies through the lenses of ICT skills: An experimental study. Education and science advance online publication.
- 2) Laxmi Vijay, Gure Gobind, (2016). Techno-Pedagogy Practices in Teacher Education. International Journal of Enhanced Research in Educational Development (IJERED), ISSN: 2320-8708, Vol. 4 Issue 6.
- 3) Leema K. M., Dr. T. Mohamed Saleem, (2017). Infusion of techno pedagogy in elementary teacher education curriculum: perspectives and challenges. Iosr journal of humanities and social science (iosr-jhss) volume 22, issue 1, ISSN: 2279-0837.
- 4) Nasongkhla Jaitip, Sujiva Siridej, (2015). Teacher Competency Development: Teaching with tablet technology through classroom Innovative Action Research (CIAR) coaching process.
- 5) Ozdemir Muhammet, (2016). An Examination of techno pedagogical education competencies (TPACK) of preservice elementary school and pre-school teachers. Journal of Education and Training Studies, Vol. 4. S.
- 6) S. Rajasekar, K. Sathiyaraj, (2013). The relationship between the Techno-Pedagogical competency of Secondary school teachers and their anxiety towards the use of instructional aids in teaching. International Journal of Teacher Educational Research (IJTER) Vol.2 No.12, ISSN: 2319-4642. S.

- 7) Rajasekar, K. Sathiyaraj, (2015). Predictors of technopedagogical competency of teachers. *International Journal of Teacher Educational Research (IJTER)* Vol.4 No.4, ISSN: 2319-4642.
- 8) Thakur Nabin, (2015). A study on implementation of technoPedagogical skills, its challenges and role to release at higher level of education. *American International Journal of research in humanities, arts and social sciences*, 9(2).
- 9) Tina (2015). Anxiety among Secondary teachers for use of instructional aids in relation to their techno pedagogical competency. *IJE* vol.4 Issue 8.

