A Study of Technological Pedagogical Content Knowledge (TPACK) Awareness among Secondary School Teachers of Barak Valley

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Abstract

The paper aims to find out the Technological Pedagogical Content Knowledge awareness among government and private school teachers of Barak Valley, Assam. Technological Pedagogical Content Knowledge (TPACK) measures how well a lesson is delivered by using technology. This is essential for the teaching and learning process because it is the ideal application for learning in all subject areas. Present investigation an attempt has been made to study the Technological Pedagogical Content Knowledge. The investigators took 60 samples from Barak Valley, Assam in a purposive way for the process of data collection through online mode and some in a telephonic way. The study shows 'P' value is 17.899 and the calculate 't' value is smaller than .05 at the table of .05(df 58) which means null hypotheses is rejected and the alternative hypotheses is accepted. So we can conclude that there is significance difference between TPACK awareness amongst government and private school teachers. 't' test was used by the investigator for this study.

Keywords: Technological, Pedagogical Content Knowledge, Education

Introduction

In the era of technology, which elevate in the all areas and the field of education is not an exception. The teaching learning environment and the system of education changed drastically because of the boon of technology. The digitalized system of education entails in the process of teaching leaning and for that teachers must aware about the knowledge of technology and how they should incorporate it in their teaching learning. It increases the potential and knowledge base of teachers'. Teachers should have knowledge in teaching skills, pedagogy competencies and digital skills in the modern era. Awareness of TPACK amongst teachers is the utmost need of the 21st century teaching learning scenario.

Using Schulman PCK as their foundation, Koehler and Mishra proposed the idea of TPACK in 2005 (Schulmann, 1986) and it come into existence as a TPCK model in the year 2006. TPCK was replaced with TPACK by Thompson and Mishra in 2007. The knowledge and abilities required to successfully integrate technology into the classroom are described by the TPACK framework and is the boon for today's teaching learning situation and awareness regarding TPACK framework is necessary for teachers in general for their success in teaching learning (Koehler & Mishra, 2008; Mishra & Koehler, 2006). It might be difficult to articulate what educators need to know because teaching is a complex, varied, and context-specific activity. When teaching, many interconnected elements must be considered lot of interconnected elements must be taken into account because the problem is inherently unstructured. Technology use in the classroom adds to the complexity of the elements that must be considered while developing lesson plans because of its dynamic and ever-evolving nature. (Koehler & Mishra, 2008). (Deb & Pradhan, 2022) as described in the Technological Pedagogical Content Knowledge (TPACK) framework, teachers need a variety of specialized knowledge and abilities to successfully integrate technology into the classroom. Teachers need to be aware of the links between technology, pedagogy, and content in order to develop a body of knowledge that transcends these three fields of competence individually. Teachers require a framework that can adapt to these changes in order to successfully integrate rapidly emerging, frequently changing technologies with a variety of teaching approaches and subject areas.

Source: http://tpack.org/
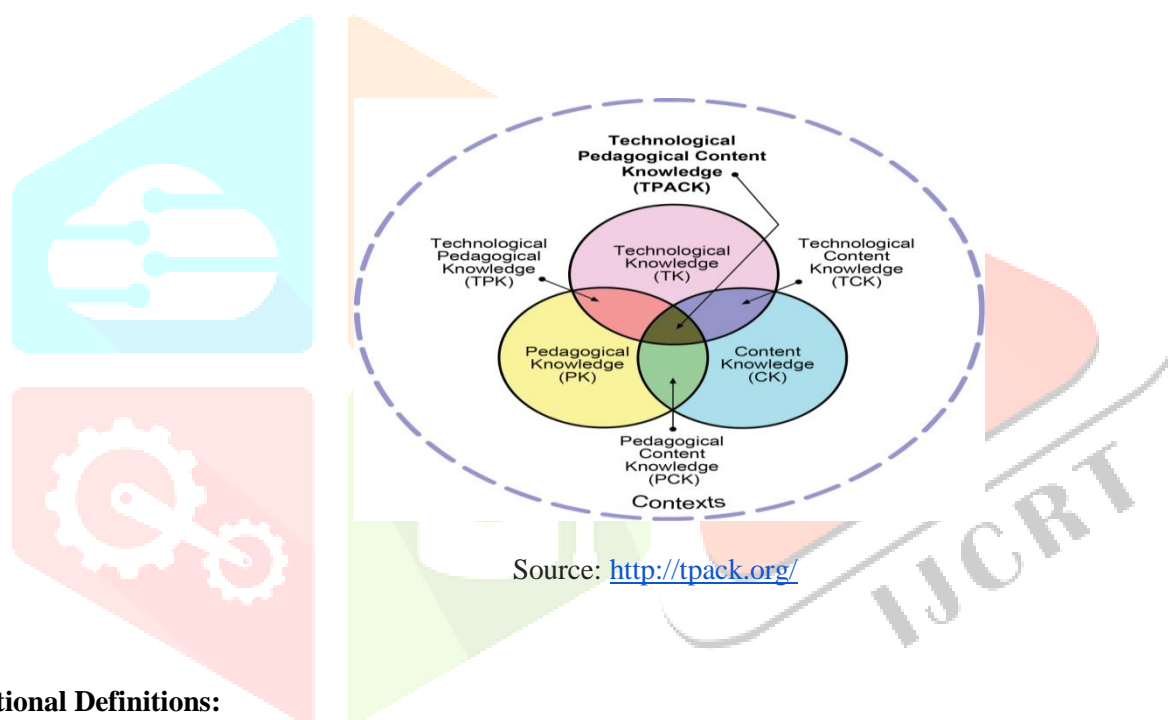
Operational Definitions:

- **CK -** Any knowledge of the subject matter that a teacher is tasked with teaching is referred to as content knowledge..
- **PK** - Teachers that possess pedagogical knowledge are familiar with a range of instructional techniques, plans, and approaches that help pupils learn..
- **TK** - Teachers' familiarity with both current and emerging technology that can be incorporated into the curriculum is referred to as their technological expertise.
- **TCK**- It alludes to understanding how content and technology interact with one another. Technology and its representational and functional capabilities frequently define and constrain disciplinary knowledge.
- **PCK**- is to Shulman's (1986) idea of "an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction" (p. 8).
- **TPK** – Understanding how technology may both impede and facilitate particular teaching methods is referred to as technological pedagogical knowledge.
- **TPACK** - In refers to create effective and context-specific teaching tactics, they need to be aware of the intricate relationships between technology, pedagogy, and content.

Motivation grounded for the study:

Teaching effectively in the modern environment depends on the teacher's ability to integrate technology, material, and pedagogy knowledge. Every element of daily life or human life, including education, is impacted by technology. A crucial ability termed techno-pedagogical skill was created in this technological age as a result of the fusion of technology and pedagogy Thappa, & Baliya, (2021). The teaching and learning processes have been significantly altered by the quick growth of technology. The typical classroom has received a fresh makeover, and the teaching environment has undergone significant alteration. In order to effectively teach in the classroom on a daily basis, a teacher needs be knowledgeable about how to use technology, pedagogy, and subject-area content. Again, how teachers use technology to enhance their lessons has the power to alter the way that education is delivered (Deb & Pradhan, 2022). In the words of Anandh,(2019) the key to ensuring the quality of education is to have qualified teachers. To become proficient in the use of educational technology, teachers must go beyond only with the newest up to date technology and familiar with these new advancements in the arena of technology. Teachers need to be aware of their responsibilities in today's digitally advanced classrooms. As a result, it's critical for teachers to get conversant with current technologies in order to successfully incorporate them into their instruction. A quick assessment of instructors' technological pedagogical proficiency is therefore necessary. TPACK awareness is useful for upgrading their knowledge, abilities, and confidence, which enhances their professional development.

Objectives of the Study:

➢ To find out the Technological Pedagogical Content Knowledge awareness among the government and private school teachers.

Hypothesis of the study:

H0: There is no significant difference between Technological Pedagogical Content Knowledge awareness among government and private school teachers.

H1: There is significant difference between Technological Pedagogical Content Knowledge awareness among government and private school teachers.

Samplings of the Study: The investigator took 60 samples from Barak Valley, Assam in a purposive way for the process of data collection through online mode and some in a telephonic way.

Table 1.1: Distribution of respondents in terms of groups

SI. No	Group	No. of Respondent
1	Government school teachers	30
2	Private school teachers	30
	Total	**60**

Method of the Study:

The study was descriptive survey type.

Tool of the Study:

The investigator used questionnaire for this study.

Analysis of the Data:

Technological Pedagogical Content Knowledge (TPACK)Awareness among government and private school teachers	Group	N	Mean	Std. Deviation	Std. Error Mean
	1.00	30	81.9667	5.63538	1.02887
	2.00	30	77.3667	11.35777	2.07363

‘t’ test was used by the investigator for this study.

Technological Pedagogical Content Knowledge (TPACK) Awareness among government and private school teachers.		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
	Equal variances assumed	17.899	.000	1.987	58	.052	4.60000	2.31485	-.03368	9.23368	
	Equal variances not assumed			1.987	42.463	.053	4.60000	2.31485	-.07005	9.27005	

Diagrammatic Representation of the data findings:-
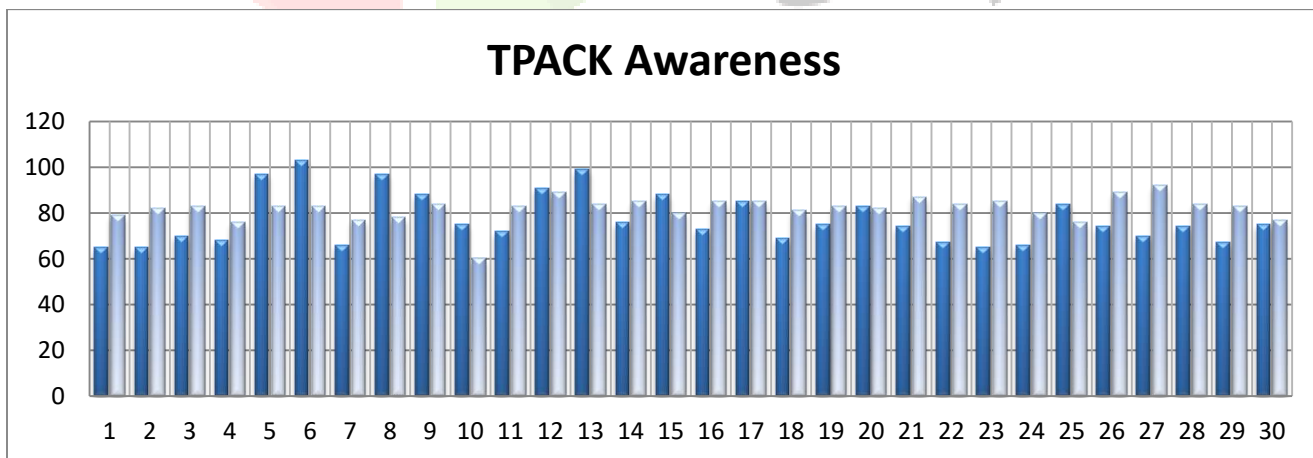
From the above, it shows that the ‘P’ value is 17.899 and the calculated t value is smaller than .05 at the table of .05(df 58) which means null hypotheses is rejected and the alternative hypotheses is accepted. So we can conclude that there is significance difference between TPACK awareness amongst government and private school teachers.

Educational Implication of the study:

The present study revealed that the government and private school teachers differ in their TPACK awareness in the field of teaching leaning. The investigator by making this study made some recommendations:

- ➢ Teachers must develop a positive attitude towards techno-pedagogy.
- ➢ Teachers must give exposure about the updated technology through training.
- ➢ Removing the phobia amongst teachers for using of technology
- ➢ Integration of TPACK and to integrate in the lesson, these things should be developed amongst teachers.

Conclusion:

The study was conducted to know the technological pedagogical content knowledge awareness amongst teachers and it was found the both government and private school teachers differ in their TPACK awareness. Thus, the appropriate measures must be taken care of to improve the knowledge of technological pedagogical content knowledge awareness amongst both government and private school teachers.

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