



A Study Of Technological, Pedagogical, Content Knowledge (TPACK) Awareness Among Secondary School Teachers

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ABSTRACT

The purpose of the present study is to explore the TPACK awareness among secondary school teachers of Kamrup (M) district of Assam, India. It is necessary to make the teaching learning situation effective and fruitful. The sample of the present study is comprised of 80 secondary school teachers of Kamrup (M), Assam, India taken in a purposive way through online mode. The investigator has used self-made TPACK-awareness scale with 14 items as per the objective of the study. Descriptive survey design has been employed. The findings revealed that majority of the secondary school teachers of Kamrup (M) district of Assam have TPACK awareness. More than 70% secondary school teachers agreed that along with proper content knowledge a teacher must possess pedagogical knowledge as well as technological knowledge to optimize the learning outcome.

KEYWORDS: TPACK, Awareness, Secondary School

INTRODUCTION:

The importance of ICT integration now-a-days in education system is felt by everyone because the conventional teaching-learning strategies and approaches are no longer applicable with the present situation. "Emergency remote teaching" has become a worldwide phenomenon due to covid-19, resulting in a temporary shift to online teaching (Hodges, Moore, Lockey, Trust & Bond, 2020).

In order to have an effective teaching-learning situation, the teacher should be well-equipped with technological knowledge along with pedagogical and content knowledge. Technological knowledge includes knowledge about different software, their applications, use of digital devices, technical skills, use of ICT in teaching-learning situations, etc., that are needed to guide students towards better understanding of subject matter. Shulman (1987) initiated the concept of Pedagogical Content Knowledge (PCK) which integrated two types of knowledge, namely, pedagogical knowledge and content knowledge for teachers. In 2006, Koehler and Mishra introduced the concept of technological, pedagogical and content knowledge (TAPCK) which is necessary to provide a proper learning environment to digitally savvy students. According to them, teachers should know effective use of technology and efficient ways of achieving the objectives of the curriculum.

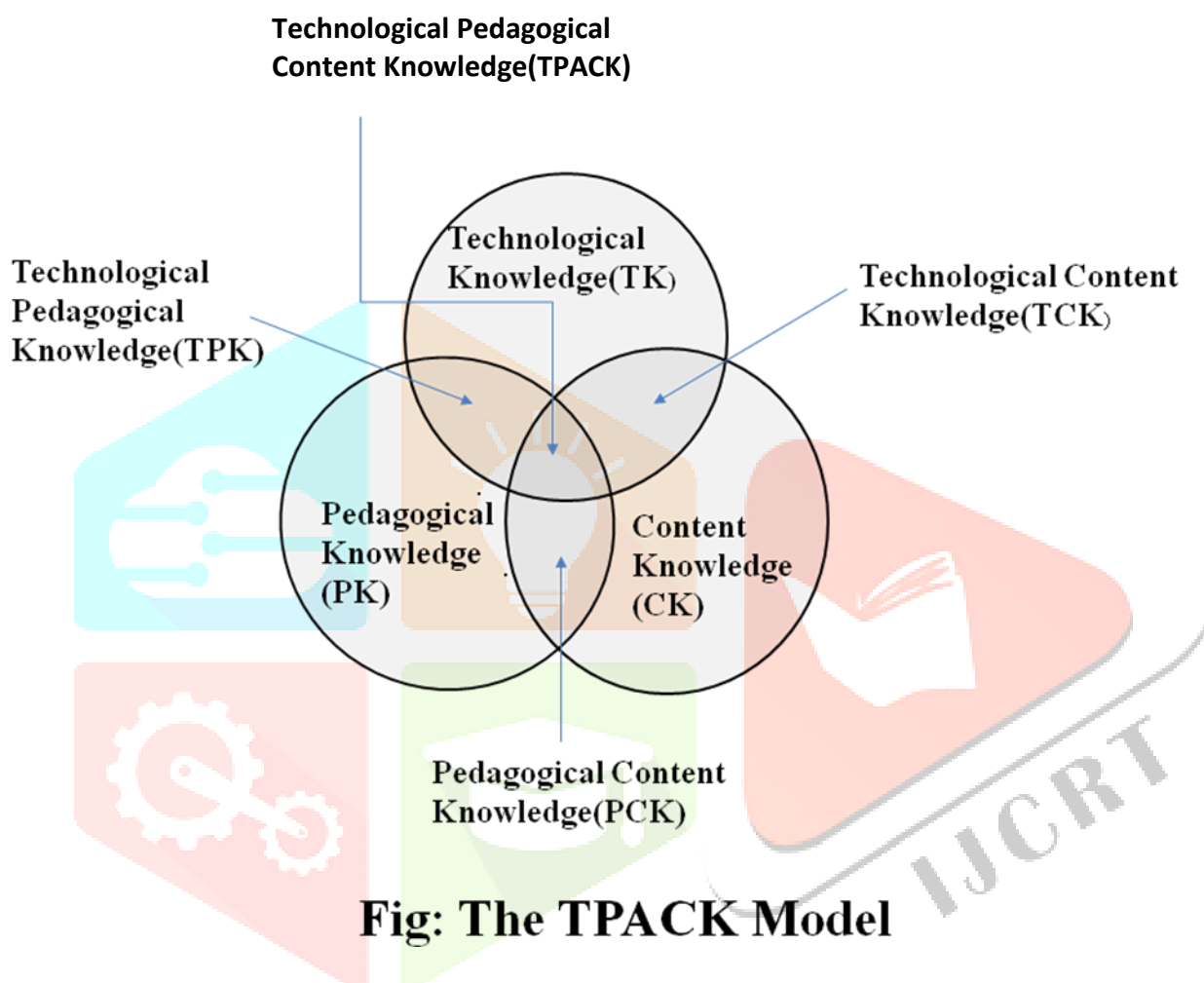
In-service teachers should possess all these three kinds of knowledge: knowledge of technology, pedagogy and content (subject matter) taught to provide their content effectively. And this will be possible only if they are aware about all these three kinds of knowledge. This paper is an attempt to explore the TPACK awareness among secondary school teachers.

Theoretical Background:

TPACK was regarded as the conceptual framework of teachers' knowledge structure.

CK refers to knowledge of subject matter that a teacher is responsible for teaching.

PK refers to the knowledge of teacher about a variety of instructional practices, strategies and methods to promote students learning.



TK refers to teacher knowledge about traditional and new technologies that can be integrated into the curriculum.

TCK refers to knowledge and understanding of the teacher about how technology and content can influence each other.

PCK refers to knowledge of the teachers to organize particular topics, problems, or issues as per the diverse need and interest of the learners.

TPK refers to an understanding of technology which can constrain and afford specific pedagogical practices.

TPACK refers to knowledge about the complex relations among technology, pedagogy, and content that enable teachers to develop appropriate and context-specific teaching strategies.

LITERATURE REVIEW

Sefika Sumeyye Cam and Gürcü Erdamar Koc (2019) has emphasized on the impression of pre service teachers for technological pedagogical content knowledge practices in higher education. The objective of this research paper was to study the perspectives of pre-service teachers on a TPACK based lesson in higher education. The researcher has selected seven in-service teachers working in a state University of Turkey who were given TPACK training and were then asked to perform practices of the training they received. The feedback about this TPACK based lesson was taken by 158 pre-service teachers of the same University. All the respondents are expected to possess good knowledge in the field of pedagogy. The researcher has used case study method. Content analysis was used to analyze the data. It has been concluded that the pre-service teachers showed a positive attitude towards these TPACK based lessons and they also found these lessons interesting.

Harun Kadioglu and Abdullah Cetin (2021) has emphasized on the effect of techno-pedagogically designed 5E learning model on the success and attitude of students in a Turkish class. The objective of this research paper is to compare the effectiveness between the techno pedagogical lesson plan and that of the methods defined by the Turkish course curriculum in accordance with success and attitude of the students in Turkish class. The researcher has selected 110 students studying in four different classes in Onikisubat district of the province of Kahramanmaraş in the 2019-20 academic year. The researcher has used Quasi-experimental research design with pretest posttest control groups. The experimental group was taught with techno-pedagogically designed 5E learning models and the control group with the method described by the Turkish lesson curriculum. Data were analyzed using independent sample t-test and the correlated sample t-test. It has been concluded that the achievement score of the experimental group is increased than that of the control group. But no significant difference is found in the average attitude score of the experimental group and the control group. Hence, the techno pedagogically designed 5E learning model is found to be effective in increasing students' success rates but not effective in changing students' attitude towards the Turkish course in a positive way.

Seema Rani Thappa and J N Baliya (2021) has emphasized on Technological, Pedagogical and Content Knowledge (TPACK) awareness in pre-service Teacher Education Programme. The objective of this research paper is to explore the prospective teachers' awareness about TPACK framework. The researcher has selected 80 B.Ed students from 2 colleges of Jammu division and 20 M.Ed students from one university of Jammu division. Descriptive exploratory design has been used and a self constructed semi structured tool is used for data collection. It has been concluded that students have individualized knowledge about technology, pedagogy and content but a very few number of students are familiar with the TPACK framework.

Chiranjit Setua (2022) has emphasized on the impact of Secondary School teachers' techno-pedagogical skills on their online teaching during covid-19 pandemic. The objective of this research article was to study the effectiveness of CBSE and ICSE secondary school teachers' techno-pedagogical skills on their online teaching during covid-19 pandemic. The researcher has used random sample technique to select sample who were secondary school teachers of CBSE & ICSE boards. Only a few cities from Kharagpur, West-Bengal & India were selected as a sample. Descriptive survey design was adapted. The researcher has conducted a structured interview with a self - made questionnaire having open ended questions. The researcher has used the Pearson's Product moment correlation and t-test to analyze data. It has been concluded that a moderate positive correlation was there between the level of techno pedagogical skills and effective online teaching of secondary school teachers of CBSE and ICSE board. Also a significant difference was also found in between the high-level and low-level of techno pedagogical skills of secondary school teachers with respect to their effective online teaching. It was revealed through an interview that covid-19 pandemic has both positive and negative impact on education, society, economy and mental health of human being.

RESEARCH QUESTION:

(1) To what extent Secondary School Teachers are aware of TPACK?

RESEARCH OBJECTIVE:

(1) To study the TPACK awareness among secondary school teachers.

RESEARCH METHODOLOGY:**Design of the study:**

For the proposed study, the Descriptive Survey Design is employed. The investigator has used TPACK-awareness scale for the collection of data from the sample.

Population: The target population of the present study refers to all the secondary school teachers of Kamrup (M) district of Assam in India.

Sample: As it is not feasible to bring all the secondary school teachers of Kamrup (M) under the present study, 80 secondary school teachers of Kamrup (M) are taken as sample for the present study.

Sampling technique: Purposive Sampling technique has been used for the present study.

Tools used: The researcher used a self-made TPACK awareness tool, consisting of 14 items, which is developed by following standard procedure.

DATA ANALYSIS:

For analyzing the assembled data, the researcher has followed the frequency and percentage calculations.

MAJOR FINDINGS OF THE STUDY:

- (1) More than half (57%) of secondary school teachers of Kamrup (M) district are strongly agreed that use of appropriate technology in teaching learning situation optimizes learning outcome.
- (2) Majority (70%) of secondary school teachers of Kamrup (M) district of Assam are agreed that they should know to use a variety of instructional strategies effectively in their class.
- (3) Majority (80%) of secondary school teachers of Kamrup (M) district of Assam are agreed that deep content knowledge helps a teacher to teach his subject better.
- (4) Majority (72%) of secondary school teachers of Kamrup (M) district of Assam are agreed that they have to know the advantages of using technology in teaching their subject.
- (5) Majority (70%) of secondary school teachers of Kamrup (M) district of Assam are strongly agreed that TPACK helps a teacher in creating an effective teaching learning environment.

CONCLUSION AND DISCUSSION:

The findings of the present study revealed that most of the secondary school teachers of Kamrup (M) district of Assam are aware about the importance of TPACK in the teaching learning situation of 21st century. Majority of them agreed that to have only the content knowledge is not sufficient for a teacher. They should have knowledge about different strategies, methods to deliver their content effectively depending on the diverse needs of their learners. Technological knowledge work as a supplement in this, as mentioned by most of the secondary school teachers of Kamrup (M) districts of Assam.

Thus the present study revealed a clear picture about the TPACK awareness of secondary school teachers of Kamrup (M) districts of Assam. Those who have low TPACK awareness should try to understand the importance of this framework and use it accordingly.

FURTHER RESEARCH:

The present study did not cover all the areas related to TPACK awareness of teachers. There is also scope for further studies on some important topics such as:

- (1) A study on TPACK awareness of pre-service teachers.
- (2) A study on TPACK awareness of in-service teachers on the basis of gender, locality, stream, etc.

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