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Secondary School Teachers' Intuition Towards Transformative Techno Pedagogy (TTP) in Capital Complex of Arunachal Pradesh

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Abstract

One of the modern trends of pedagogical approach is "transformative techno pedagogy" which motivates teachers to help pupils avail of opportunities that are based on "transformative techno pedagogy," it prepares pupils with logical thinking, critical & analytical thinking skills, as well as comprehensive understanding to build the potential to become social and emotional beings as a whole (Levitt,2008) as well as mastery over the content through the implementation of various dimensions of TPACK. As a result, implementation of transformative techno-pedagogy in the 21st century becomes significant. Transformative techno pedagogy related strategies are mandatory to implement in regular classroom settings for effective teaching. Thus, the current study is an attempt to find out Intuition of secondary school teachers towards Transformative Techno Pedagogy (TTP) in relation to gender and qualification. For this purpose, Descriptive cum survey method has been used by the researchers. Data were collected randomly form the target population and selected 200 secondary school teachers from Capital Complex of Arunachal Pradesh. Data was collected by using a self-developed intuition scale. Data was analysed through statistical techniques such as frequency, percentage, Mean, Standard Deviation (SD), Standard Error of Mean (SDE), & 't' test. The result of study reveals that teachers are having average level of intuition regarding Transformative Techno Pedagogy (TTP). The Study also reveals that there is significant difference found between Male and female secondary school teachers and on the other hand there is no significant difference was found based on qualification.

Keywords: Intuition, Transformative Techno Pedagogy.

INTRODUCTION

Teachers' proficiency in pedagogical practices and mastery over the subject matter determines how well students learn in school, and the achievement level of a school is also based on the level of competency of its faculty. Teachers have a significant impact on students' lives; competent teachers help students learn more, and teachers become more productive when they practice effective teaching strategies in the classroom. Pedagogy refers to the interaction process between teachers and students. A teacher's pedagogy is a collection of instructional strategies in which they not only concentrate on their students learning but also build academic relationships with them.

Content mastery is undoubtedly a crucial component of the teaching profession along with professional skills to deal with the learners in the classroom environment but behavioural and psychological factors also play an important role to support students' learning. Students' adjustment, motivation, critical thinking, analytical skills, mental processing, confidence, positive conduct, consciousness levels, learning outcomes, moral values, experience and academic achievement are all influenced by their relationship with their teachers, which is more significant than their academic performance.

Multiple factors are responsible for delivering effective teaching (Sharma,2020). One of the factors for effective teaching is best the selection of new trends of modern pedagogical approaches which includes transformative techno pedagogy combination of two pedagogies i.e. transformative pedagogy and techno pedagogy. We also came to know from Albert Einstein's words "*I never teach my pupils. I only attempt to provide the conditions in which they can learn."* Sir Albert Einstein's statements best define a teacher who promotes student-centered methods of teaching. However, such strategies are not appropriate for all students and age groups. Some learners require to be instructed, while others are self-directed; some require external motivation to learn, while others are internally motivated to learn; some have the willingness to learn, while others are determined to learn. In short, some people favour pedagogical educational orientations, while others prefer andragogical ones. But the problem comes when pedagogical methods and strategies are implemented in whole or in part in teaching contexts that call for andragogical dynamics.

Misunderstanding or inappropriate application of these significant issues can lead to situational, temporary, or unsustainable teaching-learning models that direct students and possibly undermine the teaching-learning process as a whole (Gupta, 2016). Therefore, to solve such kinds of issues and challenges teachers must implement updated pedagogical practices to bring transformation among the students.

Concept of Transformative Techno-Pedagogy

An innovative teaching methods, strategies, approaches, and techniques applied by the teachers in the classroom setting for effective teaching which is transformational and technological in nature is terms as Transformative Techno Pedagogy (TTP). It is the amalgamation of transformative pedagogy and techno pedagogy. Transformative pedagogy describes the praxis and capacity of beings-in-relation and beings-in-becoming alone with the components of TPACK.

Transformative Techno-Pedagogy (TTP) as praxis provides chances for both teachers and pupils to engage, exercise, realize, apply, and practice ideas throughout the teaching-learning process. Both the

instructor and pupil are free to engage in any activity connected to the subject matter and exchange their ideas during the curricular transaction, thereby creating a thorough grasp of the world. Teachers as well as pupils can employ critical thinking skills to engage themselves in any activity that emphasizes moral and social commitment in order to achieve personal and societal transformation. Students as well as teachers participated in the activity by collaborating and interacting in the classroom environment (Farren, 2016).

Transformative Techno-Pedagogy (TTP) is defined as the ability of beings-in-relation and beings-in-becoming, assists both educators and pupils in taking responsibility for self-directed learning activities such as planning, monitoring, and assessing. It also includes personal and social commitment, as well as moral and ethical values such as honesty, truthfulness, courtesy, equality, and social justice, to foster professional and social change in the context of school, classroom and nation (Farren, 2015).

Transformative techno pedagogy also includes TPACK model based on a framework developed by Shulman's (1986) i.e. Pedagogical Content knowledge (PCK) framework, which was further developed by Mishra and Koehler (2006) in a framework of TPACK (technological pedagogical and content knowledge) for a successful teaching and learning process. Technological Pedagogical and content Knowledge (TPACK) design has seven fundamental elements, which are essential for a successful teaching and learning process.

Content knowledge (CK) denotes subject matter knowledge that a teacher is responsible in teaching learning process. As we know that if teacher have mastery over the content, then only, he/she can deliver a lesson in the classroom more effectively. So, having content knowledge is important for a teacher. Pedagogical knowledge (PK) denotes teachers' knowledge about instructional strategies and practices used in teaching and learning process which makes teaching more interesting and enjoyable for the learners as well as it also reduces the effort of teachers while teaching in the classroom. Technological knowledge (TK) denotes teachers' knowledge about traditional technologies and new technologies that can be integrated in the curriculum for effective curriculum transaction.

Pedagogical Content Knowledge (PCK) is the fusion of pedagogical knowledge and content knowledge which offers teachers with an awareness of how certain topics, challenges, or difficulties are organized logically and psychologically as per the requirements and capacities of students during the teaching learning process to bring effective teaching in the classroom environment which motivates the learners to give attention in the classroom with full of interest and helps them to become mastery over the content without any difficulties.

Technological Pedagogical Knowledge (TPK) amalgamation of Technological Knowledge (TK) that denotes teachers' knowledge about all kinds of technologies that can be integrated in the curriculum for smooth function of the teaching any subject matter and Pedagogical Knowledge (PK) which denotes teachers' knowledge about instructional methods, approaches, strategies and practices which they implemented during curriculum transaction according to nature of the individual difference in the classroom. Therefore, Technological pedagogical Knowledge (TPK) promotes understanding among

educators about how technology facilitates and constrains specific pedagogical elements as today we are living in a technological era.

Technological Content Knowledge (TCK) incorporates Technological Knowledge (TK) as well as Content Knowledge (CK) which explains the reciprocal relationship between subject matter and technology. While dealing with particular subject matter in the classroom, appropriate technology is used based on its nature. Teachers can construct successful and context-specific instructional designs by using Technological Pedagogical Content Knowledge (TPACK), which gives them a grasp of the links between content, pedagogy and pedagogy.

RATIONALE OF THE STUDY

The integration of transformational techno pedagogy into both teaching and learning strengthens teacher-student participation and cultivates pupils with renewed enthusiasm.

In many ways, transformational techno pedagogy promotes student autonomy and leads to more personalized learning. In order to speed the learning process in pupils, teachers need to implement innovative pedagogical approaches that rely on technology and make the best use of the time available. when transformative techno pedagogy is incorporated into the curriculum, teachers can explore the various potentialities of their learners and provide them with new information to help them to grasp the subject matter with better understanding. To support a learner-centered classroom, teachers need to take into account the distinct roles of various domains related to transformative techno pedagogy as well as skills of how to implement of transformative techno pedagogy in the classroom are extremely important for teachers in the teaching and learning process because it enhances effective teaching and learning. Acquiring transformative techno-pedagogic competencies will make teaching and learning more enjoyable because it will relieve pressure on teachers and allow students to explore deeper into their domain of knowledge.

Choegyal (2022) has examined Bhutanese 10^{th} grade physics students' emotional engagement towards transformative pedagogy. The study found that participatory learning and attentive interactions during transformational pedagogy resulted in positive experiences for both instructors and students.

Anand and Karmakar (2021) have carried out a study on Transformative pedagogy in classroom environment. The study's goal was to determine the inclusion of transformative pedagogical approaches and tactics, as well as the execution and resolution of issues faced when implementing transformational pedagogy in the learning environment. The study found that almost every institution offered transformative pedagogical approaches, but their execution was ineffective in the educational setting due to lack of commencement and positive attitude, as well as student irregularity, which impacted the strategies and created obstacles in the way of executing transformative pedagogy in the educational setting.

Law (2021) has investigated the perspectives and level of satisfaction of Malaysian university students regarding online learning during COVID-19. The study found that a large proportion of students were satisfied with the online learning process and had a favourable attitude regarding online learning throughout COVID-19.

Dorji et al. (2020) has examined the influence of transformative pedagogy in Bhutanese classroom instruction and discovered that it had a positive effect.

Khedkar and Nair (2016) have looked into instructors' perspectives regarding transformative pedagogy in higher education, along with its influence on improving higher education quality. The study's findings indicate that university faculty are not totally concerned about transformative pedagogy, but they are ready to accept it.

Nayak and Choudhury (2024) have explored teacher-educators' technological-pedagogical skills in connection to their field of study and discovered no significant difference between science and arts teacher-educators towards technological-pedagogical skills.

Safyari and Rezaei (2024) have investigated the techno-pedagogical abilities between faculty members as an important aspect in the successful application of blended learning in teaching and learning process and they found that the techno-pedagogical abilities between faculty members was poor in higher education which affect the application of blended learning in teaching and learning process.

Kumar and Praveena (2023) have investigated the state of techno-pedagogical ability among Mysore University teacher trainees. The study found that the majority of teacher trainees showed average techno pedagogical abilities across multiple domains.

Prakash (2023) has looked at the gaps in techno-pedagogical competency among secondary school instructors and discovered that there is no significant difference in techno-pedagogical competency between male instructors and female instructors in non-government schools.

Sojanah et al. (2021) have investigated the role of impetus, self-efficacy, experience, training, physical infrastructure, and amenities in teachers' TPACK. Impetus, teaching experience, training, physical infrastructure, facilities and self-efficacy all had a favourable impact on educators' TPACK. However, it also showed that instructors lacked appropriate knowledge of TPACK.

At various educational levels, it has been revealed that the majority of studies have been carried out on innovative pedagogical approaches but no research has been found on intuition regarding “transformative techno pedagogy” in Capital Complex of Arunachal Pradesh. There is a research gap on the intuition regarding Transformative Techno Pedagogy (TTP) by secondary school teachers in Capital Complex of Arunachal Pradesh. Therefore, intuition regarding Transformative-Techno Pedagogy (TTP) among Secondary school teachers may differ, however considering the importance of this study the researchers have decided to carried out this present study.

Objectives of the study

1. To study the status of intuition regarding Transformative Techno Pedagogy (TTP) among secondary school teachers in Capital Complex of Arunachal Pradesh.
2. To study if, the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) differs on the basis of following independent variables:
   a) Gender
   b) Qualification

Hypotheses of the study

$H0_1$: There is no significant difference in the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) on the basis of Gender.

$H0_2$: There is no significant difference in the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) on the basis of Qualification.

Delimitations of the study

The present study has been delimited to:

i. Government and private secondary schools in Capital Complex of Arunachal Pradesh.
ii. Secondary school's teachers working both at Government and private institutions in Capital Complex of Arunachal Pradesh.
iii. Two independent variables namely: gender and qualification.
iv. One dependent variable i.e. intuition.

Methodology

Descriptive Cum Survey Method is applied by the investigator in this present study in order to find out the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) in Capital Complex of Arunachal Pradesh.

Population of the Study

The target population of this present study included all the secondary school teachers in Capital Complex of Arunachal Pradesh.

Sample of the Study

Investigator has used Proportional Stratified Random Sampling procedure for the accumulation of data, which was consisted of 200 secondary school teachers from 10 Government and 10 Private Secondary Schools of Capital Complex in Arunachal Pradesh.

Variables of the study

Independent variables

- **Gender**: Male and Female
- **Qualification**: under Graduate and Post Graduate

Dependent Variable: Intuition

Tools Used in the Study

Any tool used for a research study might be regarded as a major component of the study if its accuracy is established by the estimation of reliability and validity, which are qualities of an effective tool. As a result, the researcher in this study employed self-developed Intuition Scale to measure the intuition of secondary school teachers towards Transformative Techno Pedagogy. To ensure the validity and reliability of the questionnaire, the investigator has adhered to the proper standardization procedures. Total number of items for Intuition Scale remained in the final draft was 84 respectively.

Administration of Tools

The investigator visited 20 Secondary Schools in Capital Complex of Arunachal Pradesh and administered the self-developed Intuition Scale on Transformative Techno Pedagogy on the sample of 200 secondary school teachers. Before administering the tool, researcher developed a good rapport with the teachers and assured them that their responses would be kept confidential. After the field study was done, the investigator finished the scoring. The scale was scored by using a procedure of weightages given to distinct responses against each item. The weighting of various answers against each question was used to score the Intuition Scale; one mark was awarded for a correct response and zero for an incorrect response. In this way teachers having high score mean high intuition towards Transformative Techno Pedagogy.

Results and discussions

The present study is an attempt to identify secondary school teachers' intuition towards Transformative Techno Pedagogy in relation to gender and qualification. Data analysis was carried out by applying statistical techniques such as frequency, percentage, mean, standard deviation, standard error of mean, and 't" test. The study's findings were presented in a sequential order based on the study's objectives. The interpretations of data are as follows:

Objective 1: To study the status of intuition regarding Transformative Techno Pedagogy (TTP) among secondary school teachers in Capital Complex of Arunachal Pradesh.

Table 1: Overall Status of Intuition towards Transformative Techno Pedagogy (TTP)

Sample Size 200	Status of intuition regarding Transformative Techno Pedagogy (TTP)					
	Low Status		Average Status		High Status	
	20-39		40-59		60-79	
	frequency	%	frequency	%	frequency	%
	104	52%	68	34%	28	14%

Intuition scale consists of 84 items and one mark was awarded for a correct response and zero for an incorrect response. In this way total intuition scale's score is 84. The mean score of intuition scale was 42.88, which showing an average intuition regarding Transformative Techno Pedagogy (TTP). Further it was found that 52% respondents' score was in between 20-39 marks, 34% respondents' score was in between 40-59 marks and 14% respondents' score was in between 60-79 marks.

Objective 2: To study if, the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) differs on the basis of following independent variables:

a) Gender
b) Qualification

Null Hypothesis 1: There is no significant difference in the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) on the basis of Gender.

Table 2: Showing Dimensions wise Significance Difference between Male and Female Secondary School Teachers' Intuition regarding Transformative Techno Pedagogy.

Dimensions	Gender				D	SED	t-values
	Male (N_1=100)		Female (N_2=100)				
	M_1	SD_1	M_2	SD_2			
CP	4.16	1.24	4.23	1.4	0.07	0.18	0.38@
CONP	3.18	0.97	3.54	0.89	0.36	0.13	2.77*
BIR & BIB	4.9	1.47	5.2	1.46	0.3	0.21	1.43@
CK	5.75	1.55	6.31	1.56	0.56	0.22	2.54@
PK	4.81	1.67	5.42	1.37	0.61	0.22	2.77*
TK	6.81	1.98	7.74	1.51	0.93	0.25	3.72*
TCK	5.8	2.07	6.03	1.74	0.23	0.27	0.85@
TPK	4.66	1.79	5.1	1.41	0.44	0.23	1.91@
PCK	5.99	1.92	6.86	1.5	0.87	0.25	3.48*
TPACK	4.06	1.67	5.04	1.68	0.98	0.24	4.08*
Overall	50.12	9.51	55.47	8.9	5.35	1.3	4.11*

Note: CP=Critical Pedagogy, CONP=Constructivist Pedagogy, BIR & BIB=Beings-in-relation and being-in-becoming, CK=Content Knowledge, PK=Pedagogical Knowledge, TK=Technological Knowledge, TCK=Technological Content Knowledge, TPK=Technological Pedagogical Knowledge, PCK=Pedagogical Content Knowledge, TPACK= Technological Pedagogical and Content Knowledge, @ = Not Significant, * = Significant.

The above table no.2, shows that the computed t-value came out to be (0.38) with regard to critical pedagogy (M_1=4.16, SD_1=1.24, M_2=4.23, SD_2=1.4, D=0.07, SED=0.18, df=198 P > 0.01 is not significant, as the computed t-value (0.38) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to critical pedagogy due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=4.23) are slightly higher than the male secondary school teachers (M_1=4.16) in their intuition towards critical pedagogy of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.24) are slightly deviated than the female secondary teachers (SD_2=1.4) in their intuition towards critical pedagogy of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (2.77) with regard to constructive pedagogy (M_1=3.18, SD_1=0.97, M_2=3.54, SD_2=0.89, D=0.36, SED=0.13, df=198) P ≤ 0.01 is significant, as the computed t-value (2.77) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to

constructive pedagogy due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=3.54) are higher than the male secondary school teachers (M_1=3.18) in their intuition towards constructive pedagogy of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=0.97) are slightly deviated than the female secondary teachers (SD_2=0.89) in their intuition towards constructive pedagogy of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (1.43) with regard to being-in-relation & being-in-becoming (M_1=4.9, SD_1=1.47, M_2=5.2, SD_2=1.46, D=0.3, SED=0.21, df=198) P >0.01 is not significant, as the computed t-value (1.43) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to being-in-relation & being-in-becoming due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=5.2) are higher than the male secondary school teachers (M_1=4.9) in their intuition towards being-in-relation & being-in-becoming of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.47) are slightly deviated than the female secondary teachers (SD_2=1.46) in their intuition towards being-in-relation & being-in-becoming of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (2.54) with regard to content knowledge (M_1=5.75, SD_1=1.55, M_2=6.31, SD_2=1.56, D=0.56, SED=0.22, df=198) P > 0.01 is not significant, as the computed t-value (2.54) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to content knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=6.31) are higher than the male secondary school teachers (M_1=5.75) in their intuition towards content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.55) are slightly deviated than the female secondary teachers (SD_2=1.56) in their intuition towards content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (2.77) with regard to pedagogical knowledge (M_1=4.81, SD_1=1.67, M_2=5.42, SD_2=1.37, D=0.61, SED=0.22, df=198) P ≤ 0.01 is significant, as the computed t-value (2.77) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to pedagogical knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=5.42) are higher than the male secondary school teachers (M_1=4.81) in their intuition towards pedagogical knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.67) are slightly deviated than the female

secondary teachers (SD_2=1.37) in their intuition towards pedagogical knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (3.72) with regard to technological knowledge (M_1=6.81, SD_1=1.98, M_2=,7.74 SD_2=1.51, D=0.93, SED=0.25, df=198) $P \leq 0.01$ is significant, as the computed t-value (3.72) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=7.74) are higher than the male secondary school teachers (M_1=6.81) in their intuition towards technological knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.98) are slightly deviated than the female secondary teachers (SD_2=1.51) in their intuition towards technological knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (0.85) with regard to technological content knowledge (M_1=5.8, SD_1=2.07, M_2=6.03, SD_2=1.74, D=0.23, SED=0.27, df=198) $P > 0.01$ is not significant, as the computed t-value (0.85) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological content knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=6.03) are higher than the male secondary school teachers (M_1=5.8) in their intuition towards technological content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=2.07) are slightly deviated than the female secondary teachers (SD_2=1.74) in their intuition towards technological content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (1.91) with regard to technological pedagogical knowledge (M_1=4.66, SD_1=1.79, M_2=5.1, SD_2=1.41, D=0.44, SED=0.23, df=198) $P > 0.01$ is not significant, as the computed t-value (1.91) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological pedagogical knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=5.1) are higher than the male secondary school teachers (M_1=4.66) in their intuition towards technological pedagogical knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.79) are slightly deviated than the female secondary teachers (SD_2=1.41) in their intuition towards technological pedagogical knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (3.48) with regard to pedagogical content knowledge (M_1=5.99, SD_1=1.92, M_2=6.86, SD_2=1.5, D =0.87, SED=0.25, df=198) $P \leq 0.01$ is

significant, as the computed t-value (3.48) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to pedagogical content knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=6.86) are higher than the male secondary school teachers (M_1=5.99) in their intuition towards pedagogical content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.92) are slightly deviated than the female secondary teachers (SD_2=1.5) in their intuition towards pedagogical content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (4.08) with regard to technological pedagogical and content knowledge (M_1=4.06, SD_1=1.67, M_2=5.04, SD_2=1.68, D=0.98, SED=0.24, df=198) $P \leq 0.01$ is significant, as the computed t-value (4.08) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological pedagogical and content knowledge due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=5.04) are higher than the male secondary school teachers (M_1=4.06) in their intuition towards technological pedagogical and content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=1.67) are slightly deviated than the female secondary teachers (SD_2=1.68) in their intuition towards technological pedagogical and content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.2, shows that the computed t-value came out to be (4.11) with regard to overall (M_1=50.12, SD_1=9.51, M_2=55.47, SD_2=8.9, D=5.35, SED=1.3, df= 198) $P \leq 0.01$ is significant, as the computed t-value (4.11) is greater (>) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets rejected. It indicates that there is significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to overall due to variation in gender. From the mean values, it is clear that the female secondary school teachers (M_2=55.47) are higher than the male secondary school teachers (M_1=50.12) in their overall intuition towards Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the male secondary school teachers (SD_1=9.51) are slightly deviated than the female secondary teachers (SD_2=8.9) in their overall intuition towards Transformative Techno Pedagogy (TTP).

Null Hypothesis 2: There is no significant difference in the intuition of secondary school teachers regarding Transformative Techno Pedagogy (TTP) on the basis of Qualification.

Table 3: Showing Dimension wise Significance Difference between Under Graduate and Post Graduate Secondary School Teachers' Intuition regarding Transformative Techno Pedagogy.

Dimensions	Qualification				D	SED	t-values
	Under Graduate (N_1 = 100)		Post Graduate (N_2 = 100)				
	M_1	SD_1	M_2	SD_2			
CP	4.15	1.35	4.16	1.25	0.01	0.18	0.05@
CONP	3.45	0.91	3.32	0.96	0.13	0.13	1@
BIR & BIB	5.28	1.36	5.16	1.46	0.12	0.2	0.6@
CK	5.87	1.59	6.03	1.53	0.16	0.22	0.73@
PK	5.05	1.35	5.22	1.43	0.17	0.2	0.86@
TK	7.22	1.85	7.33	1.76	0.11	0.26	0.42@
TCK	5.73	1.91	5.98	1.76	0.25	0.26	0.96@
TPK	4.98	1.56	4.71	1.49	0.27	0.22	1.23@
PCK	6.57	1.85	6.65	1.49	0.08	0.24	0.33@
TPACK	4.44	1.71	4.57	1.7	0.13	0.24	0.54@
Overall	52.74	9.3	53.13	8.48	0.39	1.26	0.31@

Note: CP=Critical Pedagogy, CONP=Constructivist Pedagogy, BIR & BIB=Beings-in-relation and being-in-becoming, CK=Content Knowledge, PK=Pedagogical Knowledge, TK=Technological Knowledge, TCK=Technological Content Knowledge, TPK=Technological Pedagogical Knowledge, PCK=Pedagogical Content Knowledge, TPACK= Technological Pedagogical and Content Knowledge, @ = Not Significant, * = Significant.

The above table no.3, shows that the computed t-value came out to be (0.05) with regard to critical pedagogy (M_1=4.15, SD_1=1.35, M_2=4.16, SD_2=1.25, D=0.01, SED=0.18, df=198) P > 0.01 is not significant, as the computed t-value (0.05) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to critical pedagogy due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=4.16) are slightly higher than the under graduate secondary school teachers (M_1=4.15) in their intuition towards critical pedagogy of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.35) are slightly deviated than the post graduate secondary teachers (SD_2=1.25) in their intuition towards critical pedagogy of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (1) with regard to constructive pedagogy (M_1=3.45, SD_1=0.91, M_2=3.32, SD_2=0.96, D=0.13, SED=0.13, df=198) P > 0.01 is not significant, as the computed t-value (1) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant

difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to constructive pedagogy due to variation in qualification. From the mean values, it is clear that the under graduate secondary school teachers (M_1=3.45) are slightly higher than the post graduate secondary school teachers (M_2=3.32) in their intuition towards constructive pedagogy of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=0.91) are slightly deviated than the post graduate secondary teachers (SD_2=0.96) in their intuition towards constructive pedagogy of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.6) with regard to being-in-relation & being-in-becoming (M_1=5.28, SD_1=1.36, M_2=5.16, SD_2=1.46, D=0.12, SED=0.2, df=198) P > 0.01 is not significant, as the computed t-value (0.6) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to being-in-relation & being-in-becoming due to variation in qualification. From the mean values, it is clear that the under graduate secondary school teachers (M_1=5.28) are slightly higher than the post graduate secondary school teachers (M_2=5.16) in their intuition towards being-in-relation & being-in-becoming of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.36) are slightly deviated than the post graduate secondary teachers (SD_2=1.46) in their intuition towards being-in-relation & being-in-becoming of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.73) with regard to content knowledge (M_1=5.87, SD_1=1.59, M_2=6.03, SD_2=1.53, D=0.16, SED=0.22, df=198) P > 0.01 is not significant, as the computed t-value (0.73) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to content knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=6.03) are slightly higher than the under graduate secondary school teachers (M_1=5.87) in their intuition towards content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.59) are slightly deviated than the post graduate secondary teachers (SD_2=1.53) in their intuition towards content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.86) with regard to pedagogical knowledge (M_1=5.05, SD_1=1.35, M_2=5.22, SD_2=1.43, D=0.17, SED=0.2, df=198) P > 0.01 is not significant, as the computed t-value (0.86) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to pedagogical knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=5.22) are slightly higher than the under graduate

secondary school teachers (M_1=5.05) in their intuition towards pedagogical knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=) are slightly deviated than the post graduate secondary teachers (SD_2=) in their intuition towards pedagogical knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.42) with regard to technological knowledge (M_1=7.22, SD_1=1.85, M_2=7.33, SD_2=1.76, D=0.11, SED=0.26, df=198) P > 0.01 is not significant, as the computed t-value (0.42) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=7.33) are slightly higher than the under graduate secondary school teachers (M_1=7.22) in their intuition towards technological knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.85) are slightly deviated than the post graduate secondary teachers (SD_2=1.76) in their intuition towards technological knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.96) with regard to technological content knowledge (M_1=5.73, SD_1=1.91, M_2=5.98, SD_2=1.76, D=0.25, SED=0.26, df=198) P > 0.01 is not significant, as the computed t-value (0.96) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological content knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=5.98) are slightly higher than the under graduate secondary school teachers (M_1=5.73) in their intuition towards technological content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.91) are slightly deviated than the post graduate secondary teachers (SD_2=1.76) in their intuition towards technological content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (1.23) with regard to technological pedagogical knowledge (M_1=4.98, SD_1=1.56, M_2=4.71, SD_2=1.49, D=0.27, SED=0.22, df=198) P > 0.01 is not significant, as the computed t-value (1.23) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological pedagogical knowledge due to variation in qualification. From the mean values, it is clear that the under graduate secondary school teachers (M_1=4.98) are slightly higher than the post graduate secondary school teachers (M_2=4.71) in their intuition towards technological pedagogical knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.56) are slightly deviated than the post graduate secondary

teachers (SD_2=1.49) in their intuition towards technological pedagogical knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.33) with regard to pedagogical content knowledge (M_1=6.57, SD_1=1.85, M_2=6.65, SD_2=1.49, D=0.08, SED=0.24, df=198) P > 0.01 is not significant, as the computed t-value (0.33) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to pedagogical content knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=6.65) are slightly higher than the under graduate secondary school teachers (M_1=6.57) in their intuition towards pedagogical content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.85) are slightly deviated than the post graduate secondary teachers (SD_2=1.49) in their intuition towards pedagogical content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.54) with regard to technological pedagogical and content knowledge (M_1=4.44, SD_1=1.71, M_2=4.57, SD_2=1.7, D=0.13, SED=0.24, df=198) P > 0.01 is not significant, as the computed t-value (0.54) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to technological pedagogical and content knowledge due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=4.57) are slightly higher than the under graduate secondary school teachers (M_1=4.44) in their intuition towards technological pedagogical and content knowledge of Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=1.71) are slightly deviated than the post graduate secondary teachers (SD_2=1.7) in their intuition towards technological pedagogical and content knowledge of Transformative Techno Pedagogy (TTP).

The above table no.3, shows that the computed t-value came out to be (0.31) with regard to overall (M_1=52.74, SD_1=9.3, M_2=53.13, SD_2=8.48, D=0.39, SED=1.26, df =198) P > 0.01 is not significant, as the computed t-value (0.31) is smaller (<) than the critical t-value (2.58) at 0.01 level of significant. It means that the formulated null hypothesis gets accepted. It indicates that there is no significant difference in the secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) with respect to overall due to variation in qualification. From the mean values, it is clear that the post graduate secondary school teachers (M_2=53.13) are slightly higher than the under graduate secondary school teachers (M_1=52.74) in their overall intuition towards Transformative Techno Pedagogy (TTP). From the SD values, it is clear that the under graduate secondary school teachers (SD_1=9.3) are slightly deviated than the post graduate secondary teachers (SD_2=8.48) in their intuition towards Transformative Techno Pedagogy (TTP).

Conclusion of the study

The data analysis revealed the following conclusion:

1. The study reveals that overall Status of Intuition of secondary school teachers in Capital Complex of Arunachal Pradesh towards Transformative Techno Pedagogy (TTP) is average. The possible reason for this might be due to little awareness about the modern trend of pedagogical practices including teaching strategies, methods, techniques and approaches which are now a days essential for effective teaching and learning process as well as they may not be updated with the current pedagogical knowledge applicable for this transforming world.
2. There is difference between male and female secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) in Capital Complex of Arunachal Pradesh. According to the findings female secondary school teachers had better performance in terms of the intuition regarding Transformative Techno Pedagogy (TTP) compared to male secondary school teachers. This may be because, female secondary school teachers are more concern with the transformative pedagogy which is most important for the learners to develop values among themselves to became a good citizen as well as they are also concern about the implementation of modern trend of teaching strategies, methods, techniques and approaches during curriculum transaction for effective teaching. They are more familiar with the Transformative Techno Pedagogy and they get more exposure of modern trend of pedagogical practices.
3. There is no significance difference between the under graduate and post graduate secondary school teachers' intuition regarding Transformative Techno Pedagogy (TTP) in Capital Complex of Arunachal Pradesh. The reason for this could be because of equal amount of awareness towards transformative techno pedagogy which they get by participating various seminars and workshops as well as their equal concern on the implementation of modern trend of pedagogical practices in the classroom.

Educational Implications of the study

Transformative techno pedagogy is one of the recent modern trends of pedagogical practices in the present context. Therefore, the present study has a tremendous contribution in promoting the awareness towards transformative techno pedagogy in the state as well as across the country. The study will support and guides the concern teachers in their teaching inside and outside the classroom. The study is helpful for the curriculum designer, Policymakers, various research groups, and educational administrators for better understanding of the need of transformative techno pedagogy in present context of teaching. The current study is also a valuable contribution to the development of programmes related to transformative techno pedagogy in India. Various skill development programmes can organize to raise the awareness of teachers towards transformative techno pedagogy through seminar, workshops, symposiums, conferences and hands-on training and that will undoubtedly contribute to the professional development of teachers. Additionally, it helps the administrators in developing teacher enhancement programs that enable them to effectively handle the shifts in fundamental knowledge and technological innovations in the world. It provides additional

support to both pre-service and in-service teacher training colleges, refresher courses as well as guidance and counselling programs for incorporating transformative techno pedagogy related content and activities into the curriculum. It will support the governing authorities in providing the infrastructure required to support the smooth functioning of educational institutions, such as a sufficient virtual classroom, Wi-Fi access, fast internet, inverters, digital computers etc. for the implementation of transformative techno pedagogy. The use of transformative techno pedagogical assumptions allows teachers to be both innovative and constructive, engage learners in acquiring knowledge, establish problem-based learning, or experimenting with simulations, access genuine information and communication, and collaborate with learners, their parents and classmates. Assessment of teacher teachers' intuition towards transformative techno pedagogy has several benefits, and this study allows insight into a teacher's intentions, thinking process, understanding, and beliefs, which makes it valuable for teacher reflective thinking and corrective purposes.

Recommendations of the Study

Teachers play an important role in education, so they must be aware of the most recent pedagogical practices implemented for effective teaching. The Arunachal Pradesh Government shall also take the initiative in establishing suitable pedagogy and practice for teaching in both Government and private secondary schools by conducting various programmes related to the modern trends of pedagogical practices. More study should be carried out in the field of transformational techno pedagogy. Rajiv Gandhi University and other higher education institutions should take the lead in promoting transformative techno pedagogy implementation during curriculum transactions in every educational institution. Different educational institutions should identify vulnerable groups and organize various awareness programs to promote mass awareness towards transformational techno pedagogy. Strategies for effective teaching should be developed through incorporating various dimensions of transformative techno-pedagogy. Teachers may attend workshops and seminars to acquire knowledge about the role of critical thinking skills and constructivist pedagogy in the teaching learning scenario. The dimensions of transformative techno pedagogy must be included in teaching-learning processes for effective teaching. Prospective student teachers need to be provided adequate exposure to transformative techno-pedagogical skills, as well as more chances for self-reflective context-based classroom practice to develop critical thinking skills. Inexperienced teachers can improve their personal teaching performance as a teacher by reviewing and correcting their improper methods and teaching deficiencies with the support of experience teachers who have knowledge of current pedagogical practices along with school resources, peer support and collaborative teaching during their initial teaching practice. The administration should support technology-based education and enable technology-skilled instructors by offering all the necessary digital resources, which enhances teachers' digital proficiency and techno-pedagogical competencies.

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