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A STUDY OF TPACK IN RELATION TO SELF- EFFICACY OF PRE- SERVICE TEACHERS OF PRIVATE INSTITUTIONS

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Abstract

The purpose of this study was to study TPACK in relation to self-efficacy of Pre-service teachers of private institutions. A random sample of 200 pre-service teachers from various private institutions of Roorkee had been divided on the basis of gender and locale. Descriptive survey method was used by adapting TPACK Scale by Sharma &Sharma andSelf-efficacy Scale by MurisThe findings of the study showed that urban male pre-service teachers are more actively using Technology whereas females are more comfortable in content and pedagogical knowledge. The practical implications and future directions of the study are discussed.

Keywords:TPACK, Self-efficacy and Pre-service teachers

Introduction

We live in the technological age; therefore, technology has become essential part of our life. This also influenced the role of technology in education. Technology has been integrated in the curriculum and instruction (e.g., National Research Council, 2012; National Ministry of Education, 2012). Since teachers have a crucial role in the implementation of technology in classrooms, they need to be given necessary skills and knowledge required for the effective integration of technology by teacher educators (Niess, 2011). Today, the qualifications expected from teachers are substantially higher compared to those expected in the past.As the education technologies immensely increased and became diversified, the perception started to prevail that teachers should have an adequate level of content knowledge, pedagogical knowledge, and technological knowledge. This idea resulted in the emergence of the concept of TPACK. Using Technology with pedagogy and content in an innovative manner is an important blockage with which the pre-service teacher educators have to cope up with.TPACK (Technological pedagogical content knowledge) framework has been suggested by Mishra and Koehler (2006) for the effective integration of technology into instruction.

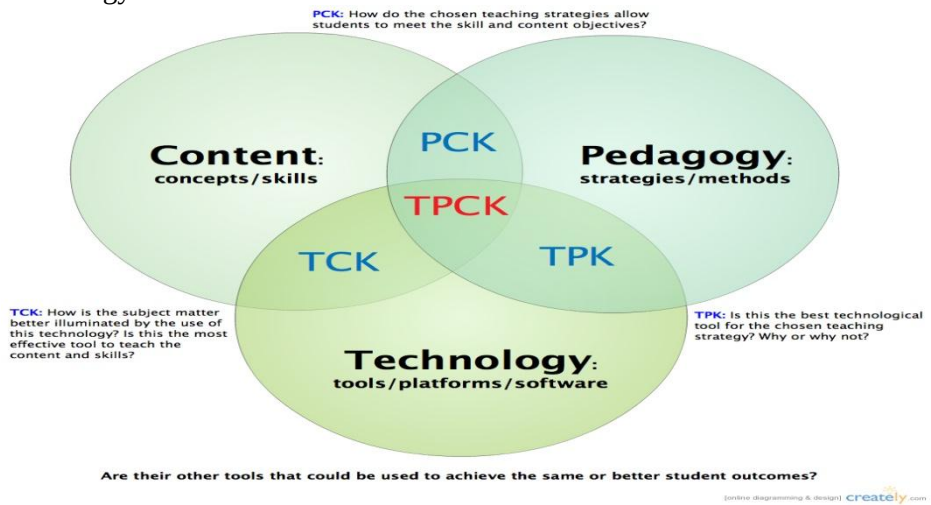

Fig1: Technology pedagogy content Concept

The three basic knowledge teachers must possess are shown in the framework to be content knowledge, pedagogical knowledge and technology knowledge. ***Content knowledge*** refers to teachers' in – depth knowledge on his subject of specialization. Pedagogical knowledge (PK) is described as teachers' in-depth knowledge about the teaching and learning process and pertains to understanding of the dynamics of student learning, including planning, management and assessment of student learning. ***Technology knowledge (TK)*** pertains to knowledge about technology, tools and resources.Self-Efficacy, which alludes to an individuals' managing of diverse difficulties, the capacity to achieve an action, and his/her faith in his/her own particular limit is imperative in the practice and development of TPACK (Senemoğlu, 2010). The act of TPACK and educators' convictions change and develop as per the application (Shin et al., 2009). Educators' impression of information technologies and their perspectives on, and rehearse in the utilization of these advances are vital as far as deciding the present advance in innovation upgraded learning. In this way, educators' view of self-efficacy is oriented to their comprehension of education that progresses and demands relying upon the innovation (Ekici, Ekici and Kara, 2012). At the point when self-efficacy expands the level of execution, the level of managing challenges, the confidence in fulfilling the errands and accomplishment in adapting additional increment. Educators ought to enhance themselves keeping in mind the end goal to orchestrate the current innovation with pedagogical and expert competence, to effortlessly beat the conceivable issues, to discover proper arrangements and grow new plans (Aşkar& Davenport, 2009).

OBJECTIVES OF THE STUDY

1. To study the relationship of TPACK with respect to locale (Rural & Urban) of pre-service teachers of private institutions.
2. To study the relationship of TPACK with respect to Gender (Male & Female) of pre-service teachers of private institutions.
3. To study the relationship of self-efficacy with respect to locale of pre-service teachers of private institutions.
4. To study the relationship of self- efficacy with respect to gender of pre-service teachers of private institutions.
5. To study the relationship self- efficacy and TPACK of pre-service teachers of private institutions.
6. To study the educational implications of the research of pre-service teachers of private institutions.

HYPOTHESES OF THE STUDY

Ho1: There exists no significant relationship of TPACK with respect to locale of pre-service teachers of private institutions.

Ho2: There exists no significant relationship of TPACK with respect to gender (male &female) of pre-service teachers of private institutions.

Ho3: There exists no significant relationship of self- efficacy with respect to locale of pre-service teacher of private institutions.

Ho4: There exists no significant relationship of self- efficacy with respect to gender of pre-service teachers of private institutions.

Ho5: There exists no significant relationship between self- efficacy and TPACK of pre-service teachers of private institutions.

Methodology

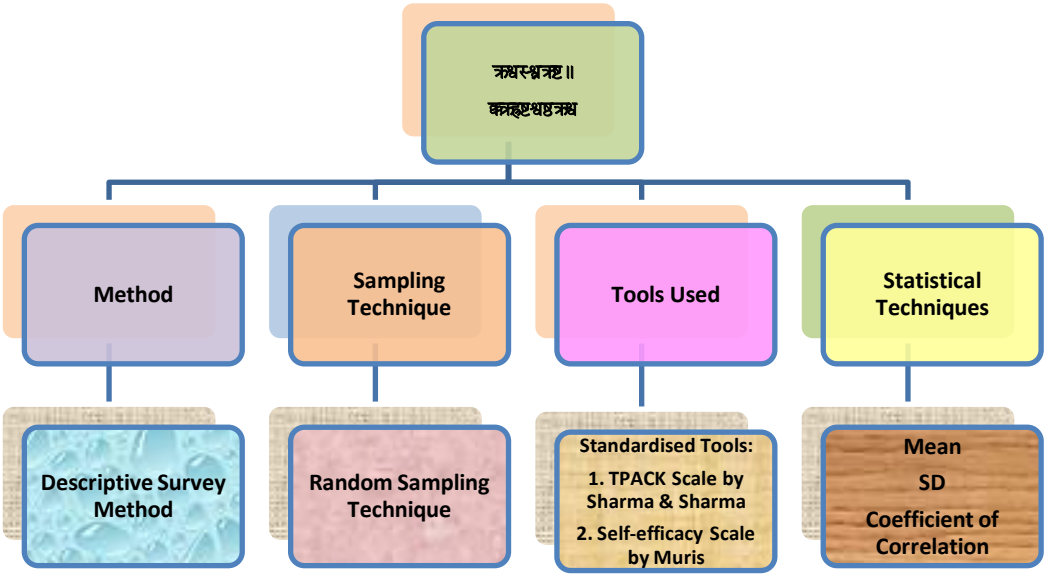

Fig. 2: Research Procedure

Sample

In the present study 200 pre-service teachers of Private Institutions of Roorkee were taken as sample. From this Population, a sample of 120 urban and 80 rural pre-service teachers had been selected. From that sample 60 male and 140 females had been selected.

Results and discussion

Table 1:

Group	Mean	S.D	DF	R
Urban	137	14.12	198	0.198
Rural	112	9.8		

Table 1 presents the coefficient of correlation between TPACK with respect to locale (Rural &Urban) of pre-service teachers of private institutions. The calculated value of coefficient of correlation for TPACKwith respect to locale (Rural &Urban) of pre-service teachers of private institution is 0.198. It shows that urban pre-service teachers are more comfortable in using technology with appropriate mastery of content and command over pedagogy. It also shows that TPACK and its components are positively and significantly correlated to each Other and indicating the above average level of TPACK

Table 2:

Group	Mean	S.D	DF	R
Male	129	11.08	198	0.201
Female	104	6.07		

Table 2 presents the coefficient of correlation between TPACK with respect to gender (Male& Female) of pre-service teachers of private institutions. The calculated value of coefficient of correlation for TPACKwith respect to gender (Male& Female) of pre-service teachers of private institution is 0.201. It shows that male pre-service teachers are using technology more frequently than female pre-service teachers. Level of TPACK of male pre-service teachers also shows that they have high level of using technology appropriately with content and pedagogy whereas female pre-service teachers are more comfortable in content and pedagogical aspect.

Table 3:

Group	Mean	S.D	DF	R
Urban	17.3	2.03	198	0.205
Rural	15.2	1.99		

Table 3 presents the coefficient of correlation between Self-efficacy with respect to locale (Urban& Rural) of pre-service teachers of private institutions. The calculated value of coefficient of

correlation for Self-efficacy with respect to locale (Urban& Rural) of pre-service teachers of private institution is 0.205. There is a slight difference in the mean scores of urban and rural pre-service teachers having self-efficacy beliefs. It shows that urban pre-service teachers have more confidence in their abilities and performing the actions. They perform any kind of task with more determination and dedication whereas rural pre-service teachers take time in completing any task more easily but they show their abilities and try to prove themselves. It also shows that self-efficacy is positively and significantly correlated to urban and rural pre-service teachers.

Table 4:

Group	Mean	S.D	DF	R
Male	12.4	1.94	198	0.199
Female	16.3	2.06		

Table 4 presents the coefficient of correlation between Self-efficacy with respect to gender (Male& Female) of pre-service teachers of private institutions. The calculated value of coefficient of correlation for Self-efficacy with respect to gender (Male& Female) of pre-service teachers of private institution is 0.199. There is a difference in the mean scores of male and female pre-service teachers having self-efficacy beliefs. It shows that female pre-service teachers are more profound in completing their tasks and showcasing their abilities to perform a task whereas male pre-service teachers sometimes do not take responsibilities seriously and lack in completing the task with full determination. It also shows that self-efficacy is positively and significantly correlated to male and female pre-service teachers.

Table 5:

Group	Mean	S.D	DF	R
TPACK	19.44	1.85	198	0.264
Self-efficacy	19.56	2.35		

Table 5 presents the coefficient of correlation between TPACK and Self-efficacy of pre-service teachers of private institutions. The calculated value of coefficient of correlation between TPACK andSelf-efficacy of pre-service teachers of private institution is 0.264. There is a slight difference in the mean scores of TPACK and self-efficacy of pre-serviceteachers. It shows that TPACK and self-efficacy are positively significantly correlated to each other. It also shows that all the

components of TPACK help the pre-service teachers to become more firm in their beliefs and to perform the task and actions by developing more abilities towards it.

Findings:

1. The findings of the study showed that urban pre-service teachers are more comfortable in using technology with appropriate mastery of content and command over pedagogy. It also shows that TPACK and its components are positively and significantly correlated to each Other and indicating the above average level of TPACK.It also showed that male pre-service teachers are using technology more frequently than female pre-service teachers. Level of TPACK of male pre-service teachers also shows that they have high level of using technology appropriately with content and pedagogy whereas female pre-service teachers are more comfortable in content and pedagogical aspect.Urban pre-service teachers have more confidence in their abilities and performing the actions. They perform any kind of task with more determination and dedication whereas rural pre-service teachers take time in completing any task more easily but they show their abilities and try to prove themselves.It was also found that female pre-service teachers are more profound in completing their tasks and showcasing their abilities to perform a task whereas male pre-service teachers sometimes do not take responsibilities seriously and lack in completing the task with full determination.TPACK and self-efficacy are positively significantly correlated to each other. It also shows that all the components of TPACK help the pre-service teachers to become more firm in their beliefs and to perform the task and actions by developing more abilities towards it.

EDUCATIONAL IMPLICATIONS

The present research demonstrates that in transmuting from a conformist chalk and talk technique to atechnology utilization showing strategy not just enhances classroom instructing but rather additionally enhances their Technological, Pedagogical and Content Knowledge and Self–Efficacy. It appears to be more practical and is broadly acceptable to pre-service teachers. It has numerous different favorable circumstances:

a)Technology can be utilized as a supernumerary for practically anything in the class like pencil, book, TV, reference book, guide, library and some more

b) Technology can be utilized as a complement in expansive gathering classroom educating.

c) Technology can be utilized independently, in little or extensive gatherings or by the educators with the entire class.

d)Technology proposes another part for the educator. It prepares the pre-service teachers to being the sole source of data for instructing the remote learner educators in the classroom.

e)Technology can be utilized to upgrade parts of instructing through introduction of data in various courses and in various structures. Pre-service teachers can control and roll out improvements to

data on PCs with the goal that they can create comprehension of the connection between various sorts of data or through the way toward changing that data drastically.

Technology based teaching can restore the traditional teaching process and make it more effective. The findings suggest that Technology can play a vital role in enhancing Technological, Pedagogical & Content Knowledge (TPACK) and Self-Efficacyof pre service teachers. So, educationists, policy planners and administrators need to develop more sophisticated understanding of the conditions, circumstances, means & mechanisms through which technology can be closely connected to the young pupil teachers and their Technological Pedagogical and Content Knowledge (TPACK) and Self-Efficacy.

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