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Education

CONCEPTUALIZING PEDAGOGICAL SKILLS WITH A TECHNOLOGICAL TOUCH

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ABSTRACT **Purpose:** The present paper addresses an important issue on upgrading the pedagogical activities of in-service teachers. There is a tremendous surge in use of technology being applied everywhere from kitchen to class rooms. Teachers must be oriented to understand this compulsion of adapting techno aspects in their routine teaching program. S,o a logical and theoretical discussion is presented herewith for the benefit of teachers to understand the significance. Teachers have to extend and expand their thinking from traditional Pedago-Content skills towards the point of improving and upgrading their professional career by adapting all possible technological advances. The discussion begins from a formal concept of Pedagogy it's interpretation as a skill and competence. Later the association of Pedagogical and Subject-matter Knowledge is tagged with Technology.

KEYWORDS : Pedagogical Skills, Subject Matter Knowledge Pedagogical Content Knowledge Techno Pedagogical Content Knowledge

1. Introduction

Pedagogy is the backbone of Formal Education System. It is said that- "there is no teaching unless there is learning". So teacher and students are bipolar entities in the structural set up class room. The art and science of teaching is called as Pedagogy. Pedagogy is a traditional discipline of study. Teacher competence is the ability of teacher to deliver the lessons effectively in class.

Pedagogy is the subject which primarily deals with methods and techniques of teaching which form the focused area of Didactics the overall science of teaching. It deals with the process like, how a subject is taught, the way in which its content is delivered, how the students learned it, etc. etc. But in the present age, pedagogy takes a broader level notion, the art and science of education, the function of teaching and after all stands as a profession itself.

It endows with knowledge of theories of teaching, Learning and instructional strategies, and putting these theories into practice. Of course, it is a course of study at UG, PG and research level program. So whenever we think of quality of Education we must mind the Pedagogical levels of teachers working in the field. In what way we can analyze the structure and functions of this pedagogical abilities endowed with any teachers actively engaged in teaching?

2. Pedagogy: knowledge- Competence- Skills:

We find the high frequency usage of the terms, technology, or skills to extend its concept as in 'technical skill' to 'life skills' etc. Both of these concepts are in nerves and blood of modern life and many Professional activities regain new and renewed meanings. Pedagogy is an area where we need both of these broad category of thoughts to build, understand execute the progressive ideas of teaching.

One must be able to differentiate the meanings between Knowledge, competency, and skill etc, to understand the concept of Skill well. KNOWLEDGE simply means information or understanding about something, whereas COMPETENCY includes one's knowledge and related behavior that enables him to do a work successfully. It is something that potentially set apart which differentiates individuals.

SKILL means the ability to do the things and it may be learned type of ability and is always specific in nature. So, it is clear that before one acquires skills in a particular field he has to gain knowledge and competencies in that particular area. So in that perspective, skills imply expertise needed in order to do a work, job, or task. Skills bring confidence, independence, fluency and overall success.

3. Pedagogical Skills have a major role:

When it comes to PEDAGOGICAL SKILLS, a reshaped set of professional skills, usually have a tremendous effect on the practitioners of that profession. Sometimes we refer the the compounding phrases like Professional and Pedagogical skills or competencies of teacher (Hanifath etl, RICE, ISSN: 2146-0353). It thus involves educating or teaching or strategies of instructing, where instructing can be understood as preparatory teaching. Etymologically it conveys some funny message. Paidagogos, the root implies 'slave who took children to and from school pedagogue' (Your Dictionary, American Heritage Dictionary of English Language, 5th Edition).

Developing a set of professional skills in them is important for every practicing individual teacher as it influences the pedagogical practices of his own and also of his fellow teachers. Hence, many a time the stress is on enhancing of professional skills which leads to efficiency of the individual professional which in turn results in development and yields his organization.

Pedagogical Skill includes all types of skills related to the profession of teaching. But in a wider context these skills presuppose a critical approach regarding teaching learning and assessment (www.bth.se > 2016/03 Pedagogical Skill). So from the disciplinary foundation of Pedagogy, the Pedagogical skills are built on intensive (deep), extensive (broad) and updated knowledge within the field (teaching) and it also addresses the issue connected to learner and subject matter. More over it also includes the competence to relate the teaching with the research principles developed already. Hence in totality the concept of Pedagogical Skills is little bit Complex in nature.

4. What Pedagogical Skills are expected of from a Teacher?

We can apply some analytical description to simplify the concept of these skills to understand it in a better way. Pedagogical Skills are expressed through effective teaching learning processes and related evaluation activities. So if it is to be narrated briefly it must spread over the following broad level teacher competencies in relation to the subject he teaches. Say, for example, for any SCIENCE teachers following could be the formulations.

- capacity to understand NATURE and philosophy of Science and its Content
- Ability to design instructional PLANNING
- Develop all CONTENT related competencies
- Fix appropriate EXPERIMENTAL and hands on activities
- Choosing suitable METHODS for the delivery of lessons
- Focus on developing PROCESS SKILLS while dealing knowledge as a product
- Adopt sound Psychologically based CLASS ROOM interaction and practices
- Usage of appropriate EVALUATION activities
- Embrace the TECHNOLOGICAL approaches through out
- Relate modern RESEARCH outcomes to teaching knowledge base

This is just a representative sample list, neither can be claimed to be completely descriptive, nor exhaustive in any way. So, one can expand this list to spell out more and more sub-skill statements while moving down to multi levels.

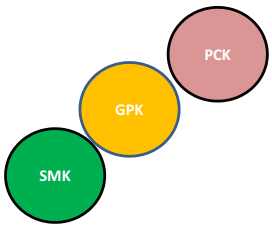
Further, to break down the complexity of Pedagogical Skills, we will enter into a threshold of splitting the above domains into more convincing categories of competencies or skills.

5. The two broad based Components of the Pedagogical Knowledge Base:

At the very preliminary level one can readily identify that the knowledge base of any teacher is a combination of General Pedagogical Knowledge GPK (B Ed. degree) and Subject Matter SMK (B.Sc. degree).GPK is actually built over his SMK acquired previously on any specific School subjects like Science, Social Science, English, Kannada etc.

The very much striking aspect is that once the student teacher (Pre-Service stage) starts practice teaching and in a later course become a professional (In-Service stage) teacher we find a sort of departure point in GPK and SMK. The teacher really now moves into another level of Knowledge cum performance base. This particular category is referred as PCK Pedagogical Content Area.

Fig (1):



6. PCK Pedagogical Content Knowledge, which is more important:

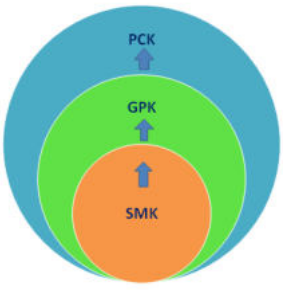
The GPK, the teacher's professional knowledge (Tom & Valli, 1990) is of foremost concern. And focusing only on SMK in basic School subjects is mere a overstress on content of teaching. Similarly developing just General Pedagogical Skills is also insufficient. In Schulman's view point the key aspect is to distinguish a third knowledge base which generates from a combination of Pedagogy and the Subject Matter (Shulman, 1986). Hence a new Knowledge base is to be identified and defined which was named as Pedagogical Content Knowledge PCK. Few of the key elements of PCK may be listed like this (Shulman, 1987):

(i) General Pedagogical Knowledge- the knowledge base of teaching Strategies such as -Knowledge of purpose of Education -Knowledge of Education Content- Curriculum Knowledge

(ii) Knowledge of representation of Subject Matter or Content Knowledge

(iii)Understanding Students' conception of Subject Matter and the Teaching and learning implications associated thereof.

Fig (2):



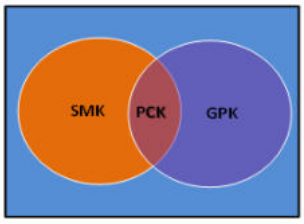
In the practical world, at first level, people acquire the (School) subject knowledge at the stage of their general education. If one prefers to join for a teacher profession he will adopt this knowledge in which case we call it as Subject Content/Matter Knowledge SCK/SMK (Pai, B. D., 2007).

Pre Service Teacher Education is a shift in focus primarily to pedagogy which gives emphasis on skills related to teaching or more precisely the General Pedagogical Knowledge GPA (Bal & Mac Dia rasid, 1990). These skills are based on classroom theories and practices and usually presented separately from the content he teaches.

Now, when the teacher applies his SMK and GPK at the field level, the third level knowledge category, PCK come into action. As it is already pointed out, this represents the intersection and blending of two. PCK provides an understanding that how best a particular domain of subject matter can be organized and presented for instruction.

This sub component of teaching competence dominates when the teacher enter into actual profession of teaching after completing his PST program. The two sets of knowledge SMK and PCK practically interact and inform each other. So it is argued that, through their career build-up at the beginning the PCK is fairly thin, and as the teacher progress the PCK increases in size and importance, in relation to SMK and that the two inform each other (Wilson etl, 1987).

Fig (3):



But there is a strong criticism on the notion of PCK itself the main reason being the confusion in defining its structure (Cochran, King and Ruiter, 1993; Van Driel, Verloop and Devos, 1998). However PCK had become a widely useful and well accepted academic construct (Loughran, 2003).

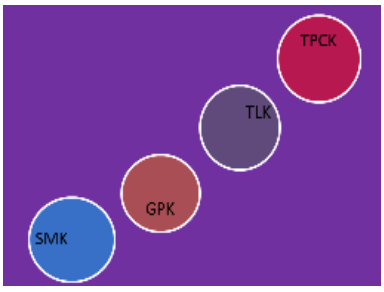
7. Technological tagging is the order of the day: TPCK

So far our discussion was in progress to form and understand the Pedagogical skills with its components being dissected and exposed. As the technological penetration is spreading to every walk of human efforts teaching field also cannot remain unaffected.

The use of technology in classroom teaching is increasing tremendously teachers pedagogical efforts also get modernized with techno touch. Use of Internet and all sorts of electronic devices in every day teaching forces us to Converts PCK into TPCK, the techno Pedagogical Content Knowledge. And even we can rename Content and Pedagogy Knowledge as TCK and TGK to indicate their up gradation with technological applications.

So Schulman's formulation of PCK was extended later wherein teachers integrate TECHNOLOGY into their pedagogy to develop more complex situational form of knowledge, Technical Pedagogical Knowledge, TPCK (Mishra & Koehler, 2006). Naturally TPCK must contain three components of learning environment, Content-Pedagogy-Technology (Thompson and Mishra, 2008).

Fig (4):

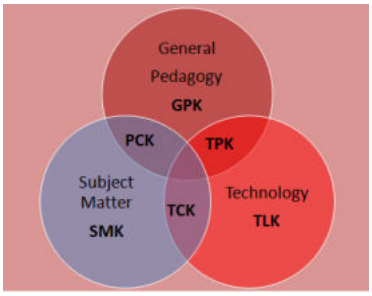


So now a new era has began in research, to focus on understanding teaching from the teachers' techno pedagogical perspective rather than the old approach that focused on labeling of teaching behaviors (Pai, B. D., 2007).

8. Techno Pedagogical Knowledge TPK

The term Techno-Pedagogy refers simply the Pedagogical practices which are technologically supported. It reflects the opportune relation between technology and Pedagogy (Coerbal. u ottava .Ca, 2021). Especially this blending turns the teaching learning into a pleasurable exercise (Worldwide Journals .com). If one uses his Information and Communication Technical knowledge into pedagogical situation it becomes TCK (Bérubé & Poellhuber, 2005). More research work is to be done in the area of developing effective TPK (Grenon, Larose, & Bolduc, 2019).

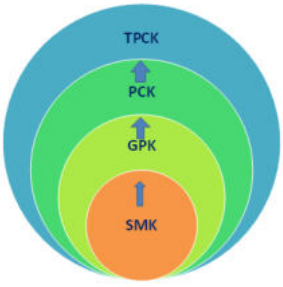
Fig (5):



9. Technology Integration

This represents the idea that technology is used all the way. It is determined by first starting with school curricular Subject such as Science, Mathematics etc and then identifying technologies and the ways that these technologies can be used to improve learning in the curricular areas (Earie, 2002). Two three decades back INSTRUCTIONAL TECHNOLOGY (IT) was a movement that started using of the electronic multimedia gadgets inside classrooms. Later it was application of INFORMATION COMMUNICATION TECHNOLOGY (ICT) that became popular in educational platforms. In the modern classrooms we may quote instances as simple as the use of a U-tube video in English Class; a lesson delivered using a white board; screening of a documentary in School Science Club etc.

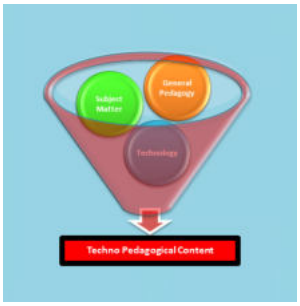
Fig (6):



But effective integration of Technology into Curriculum involves more than simply knowing the use of tools (Technological Knowledge, TK/ TLK). Remember that TK is the knowledge just enough to use technologies, so to what extent this will help the teacher in classrooms?

What is important is to know about pedagogies to teach by using the the prescribed content (PCK). How, when and to what extent a particular aspect of technology can be used to produce maximum gain happens to be more important It says that teachers shall have a sense of how to blend or integrate technology with the subject content. All these are collectively referred to as TPCK. TPCK optimizes the learning process (Moursund, 2002). Technology should not be treated as a separate add-on entity to the curricular load. It is to be viewed as rather an integral part of teaching learning activity (Heidi Hayes- Jacob)

Fig (7):



The fluency in traditional knowledge categories such as computer literacy, Information Technology, Communication Technology, etc can be considered as constituent aspects of TPCK. But we have to identify and adopt the aspects in a proper way of TPCK crosses beyond these segregated thoughts and take a wider angle to culminate in a productive approach to the applications. (Koehler & Mishra, 2009, p. 64)

10. Koehler & Mishra (2009) TPaCK model

The logically derived TPCK referred to in the above paragraphs is derived with some pedagogy base logic. A similar model the TPaCK (Technological Pedagogical and Content Knowledge) is developed by Mishra & Koehler (2006). Anyhow the model of Techno-Pedagogical-Content (Karsenti, 2018) as an extension of ICT (Kessler, et al, 2017) has a big impact on educational technology research (Cox & Graham, 2009).

Technological Pedagogical Knowledge (TPK) is indicate how teaching and learning gets changed when a particular technological knowledge is used in a particular ways. This includes knowledge of pedagogical affordability and constraints range of technological tools to bring about appropriate pedagogical designs and strategies (Koehler & Mishra, 2009, p. 65). Hence TPK demands a prosperous look open mindedness to seek technological advancement for the sake of advancing students learning.

11. Conclusions:

The major concluding remark is that Technology can be applied to improve Pedagogy in many ways. So the modern class room teachers must acquire technological skills to a sufficient level. They must know to blend their technological knowledge with their content related pedagogical skills which they acquired already for efficient delivery of class room lessons.

An integration of Technology-Pedagogy- Subject Matter (Content) knowledge can be referred to as Techno-Pedagogical-Subject Content Knowledge. This is something like a revolutionary type of knowledge which is expected of from a prosperous teacher of 21st century.

It is a real time interdisciplinary area of modern teaching. This integrated skill can be adopted to cater the learning styles and individual learner's needs. So ample resources being created in the form of e-learning, e-books, e-resources et. And any ordinary teacher gets a good opportunity to develop good lessons and classroom teaching which can remove the boredom and monotony of traditional teaching.

Rabindra Nath Tagore has rightly said - "He who dares to teach shall never cease to learn". Internalizing TPCK skills develops in him a full pledged teacher hood which could be digitally-transforming, globally-active, institutionally-collaboratively, quickly adopting to changes, most forward looking in spirit, creatively fast progressing, competent human-resource and after all a qualified Modern Teacher

REFERENCES:

1. Hanifath etl, RICE, Review of International Geographical Education online (REGEO) Turkey: ISSN: 2146-0353,
2. Koehler, Mathew. Mishra, Punya. Harris Judi. Michigan State University (2009).What is Technological Pedagogical Content Knowledge? Contemporary Issues in Technology and Teacher Education, 9(1), 60-70.
3. Modern Teacher. IJCRT, Volume 9, Issue 3 March 2021
4. Your Dictionary, American Heritage Dictionary of English Language, 5th Edition Cochran, King and Ruiter, 1993; Van Driel, Verloop and Devos, 1998
5. Mishra P., Koehler M. J., Henriksen. (2011). The seven trans-disciplinary habits of mind: Extending The TRACK framework towards 21st century learning, Educational Technology, 2011-JSTOR
6. Mishra P., Koehler M. J. (2008, 2009), Introducing TPCK. AACTE Committee on Innovation and Technology (Ed.) A hand book of technological pedagogical content knowledge (TPCK) for Educators. NJ: Lawrence Erlbaum Associates
7. Shulman L. (1986). Those who understand: Knowledge growth in teaching. Educational Researcher, 15(2),4-14
8. Grenon, Vincent. Lafleur, France. & Samson, Ghislain. (2019). Developing the Techno Pedagogical Skills of Online University Instructors VOL. 34, No. 2 2019
9. Pai, B.D. (2007). To Study the Effectiveness of Instructional Package in Science Teaching Competencies over Teachers Performance and their Impact over Students Achievement and Process Skills in Science, Dept of PG & Research Studies in Education, University of Mysore