Teacher to an Educator: (Re) locating the role of ICTs in the backdrop of the theoretical framework - TPACK

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Abstract

To keep abreast of the fast changing pace of time is one of the primary imperative necessities of every teacher for not turning to be either obsolete or redundant. In the present digital divide, the use of ICTs opens up multiplicity of possibilities and the role of the teacher from conventional mantle exacts symmetrical transformations. In this context the present article undertakes to investigate how the digital portfolio posits challenges to a teacher and how befittingly should the teacher customize and transpose himself from the conventional teacher's role to that of an educator.

Key words: ICTs, technological integration, TPACK

Introduction

Role of a teacher is never static, general or global; in lieu, it is performed in concert with the changing specificities of teaching-learning environment. Within the broader role as a teacher in general, is embedded many other associate roles that determine how a teacher has to perform discretely in respective contexts. The digital tool at this moment in time, nonetheless only a partial constituent in the teaching-learning environment, undeniably accentuates tremendous impact in the newfangled modernistic information age. In this context the present article attempts to unpack the impending paradigmatic shift in the role of a teacher in the context of technological integration in higher education. Also the article undertakes to investigate how the digital portfolio posits challenges to a teacher and how befittingly should the teacher customize and transpose himself from the conventional teacher's role to that of an educator.

In this context the present paper extends its purview to questions that demand multivariable deliberations such as: whether teachers in their career ingenuously draw on the information communication technologies and if yes, what is the real impact ensued from such technological blending in classrooms. Are ICTs used out of innovative interest or out of coercion from some other quarters is yet another significant question that musters attention. Invariably,

many teachers use ICTs in classrooms as a compulsive source of innovation (mostly Microsoft PowerPoint) either as a means to quickly cover up portions or to turn upon it as a bullet ridden display aid fashioned with some pictures and clippings. However, it will be worthwhile if such discussions are to be premised not merely upon the technological discipline but also upon the pedagogical and content proficiency and adeptness.

Problematizing the integration of ICTs

Integration of information communication technologies (ICTs) in the behaviourist and constructivist pedagogy is quite ubiquitous and many educators feel that the hype for such discussion has shown decline in gravity and urgency because of overplay. But the enduring growth, updation and upgradation of technology falling in lines with the widening base of learners' unprecedented likeness, skill and interest in opposition to the elderly disinterestedness warrant educators to capitalize on the issue for reconsideration and renegotiation.

Technology indisputably engages to endure a strong impact on every domain of modern life. John Dewey writes, "If we teach today as we taught yesterday, we rob our children of tomorrow" (167). Technology has to be utilized not only at the transaction level but it must also be put to use to promote learners' propensity for problem solving (at the individual and collaborative level), develop creativity, endorse adaptability, facilitate higher order thinking skills and objective evaluation. Unfortunately in the Indian system of higher education, technological integration is simply restricted within the domain of transaction alone. On the contrary, learners' access to computers and high speed internet in colleges and homes and their interest and reliance on it for domestic purposes have intensified substantially. Hence the ultimate aim of ICT integration primarily is to emphatically improve the quality of student learning at multiple levels. Hadley and Sheingold (1993) identify three major advantages of incorporating technology effectively in the teaching-learning process. They maintain that ICTs will unequivocally help:

- ❖ engaging students in active learning
- ❖ relying less on whole-group instruction and,
- ❖ encourage more independent and self-motivated learning

Incidentally, just for appraisal; do teachers use ICTs in classrooms with a deterministic purpose or as a pedagogical necessity? Many a times, the use of ICTs is merely to satisfy the professional compulsion and invariably the most common PPT presentations facilitate the dull verbatim vocal reading of texts that are copied from some sources immaterial of legitimising its authenticity along with some downloaded images. But what remains remarkably deficient is the

teachers' dogged capacity to explore for creativity, adaptability and subject specific appropriateness. "High-tech teachers engaged their students in collaboration, project–oriented work, hands-on activities, inquiry and discovery-based learning, observes Honey, M., and Moeller, B (6). Harold Wenglinsky yet another distinguished educator in his book *Using Technology Wisely* (2005) found that students perform better in classrooms taught by teachers employing technology with constructivist teaching methods that are used for real-world problem solving contrary to its use for drill and practice by the didactists (xiii)

Technology in education to be reified is an effective constituent integrative means and not an object of instruction. Nonetheless, it is rather complex and evenly challenging within the fast changing nature of them. UNESCO's ICT competency standards for teachers (2008) emphasize that teachers critically need requisite knowledge to use ICT for supporting constructivist learning which involves knowledge construction and problem-solving activities within authentic contexts. Technology could also be effectively used to monitor and measure students' comprehension of the content. Schoffer and Logan (1999) emphasize that integrating technology not only involves the attainment of computer skills but also consist of process in which learners try, fail, access and evaluate.

Hence integration of ICTs, do not simply mean, the familiarity or hands-on-training of different technological knowhow, but the appropriate and systemic adaptation of them at different levels: knowledge transaction; initiation of creativity; developing higher order thinking, problem solving and objective evaluation of learners' academic progression.

Latest challenges in ICT integration

As discussed in the earlier section, merely requiring a set of skills or technology competencies for instructors does not presumably ensure that technology will be used in the classroom appropriately and effectively; observes Wenglinsky (2). Though unappetizing, it is an embarrassing fact that cannot be disproved that "Teachers feel inadequately prepared for subject specific use of ICT and robust theoretical frame work is lacking" (Chai, Joyce and Tsai 31). Hence teachers cannot be held accountable either for not using ICTs or for adapting and integrating them meaningfully to the teaching-learning process. Perhaps some of the possibilities to tide over this predicament are, either to integrate technology adaptation as a separate paper in the Bachelor degree (Education) or to incorporate this as an important element in the in-service training courses where the necessary ICT components are spiraled and updated.

Many other fundamental obstacles that could be appended in this context that are squarely confronted by higher education faculty in the process of technology integration in the teaching-learning process are included hereby as follows:

- ❖ Lack of training provided to make the best and effective use of ICTs in classrooms
- ❖ The rapid pace of technological change and development
- ❖ Time intensive nature of technology integration
- ❖ Ill equipped classrooms with no state of the art gadgets
- ❖ Availability of universal and general software
- ❖ Lack of appropriateness of educational software different purposes
- ❖ "Somebody Else's Problem" Syndrome
- ❖ Lack of appreciation and reward for developing the best practices

Technological Pedagogical Content Knowledge - TPACK

Use of technology can never be adopted similar in dissimilar contexts. It needs to be discrete and felicitous. Technology has to be meticulously and appropriately customized in the given environment with adequate expertise to facilitate learning process and as Polly et. al. (2010) underscore, teachers need to understand:

a) the relationship between technology and content

b) the relationship between technology and pedagogy

c) the relationship between content and pedagogy

In other words, teachers need to be knowledgeable about the intersection of technology, pedagogy and content.

An integrative and transformative theoretical framework that has recently registered significant relevance in synthesizing ICTs in classrooms is the *Technological Pedagogical Content Knowledge* (TPACK). It is a term used by Punya Mishra and Dr. Matthew J. Kohler to designate teachers' knowledge about information and communication technology integration. It is fundamentally integrative and transformative in perspective that aids teachers in deliberating the effective use of ICTs in classrooms.

Before proceeding further, let a few sentences be spared regarding what TPACK does mean in the teaching environment. TPACK is the "integrated form of contextualized knowledge," write Chai, Joyce and Tsai in their research article titled "Facilitating Preservice Teachers' Development of Technological, Pedagogical, and Content

Knowledge (TPACK)" that is endowed with multiple potential generative uses (64). The core constituents of TPACK include Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK). The interaction of these fundamental factors produces new equations that are Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK) and Technological pedagogical Knowledge (TPK).
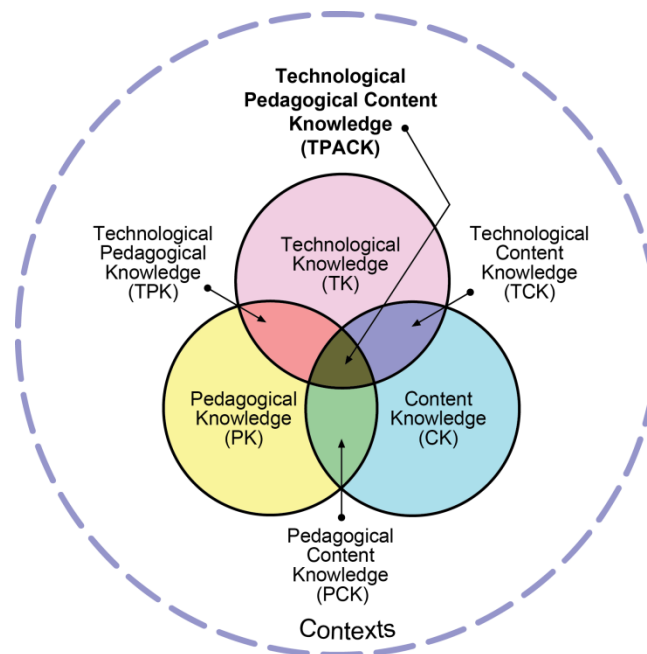
The conception of TPACK is not quite recent in the field of education. Locating the trajectory of TPACK from its inception, Ching Chai, Joyce Koh and Chin-Chung Tsai in "A Review of Technological Pedagogical Content Knowledge" write that the notion of TPACK got formally emerged in the literature of educational journal in 2003 and originally the acronym was TPCK and recently it got changed to TPACK for the ease of pronunciation. Since 2005, TPACK has been a burgeoning focus of research especially among teacher educators (31).

However, despite the availability of diverse possibilities, it is imminent to resolve and ascertain whether the knowledge regarding the harmonization of technology, pedagogy and content knowledge remain conclusively within the realm of teacher educators or are there other possible avenues to systematically address it elsewhere. The present era is the age of specialization where preoccupation is narrowed down to one's own respective field. Notwithstanding, being a teacher who possess a high profile status and expectation in society, one cannot wait for someone else to do the allied work and feel complacent solitarily on the quantum

of content knowledge plus pedagogy in possession. Therefore, though the responsibility of equipping teachers with ICT expertise primarily rest with teacher training institutions, it has to be adequately augmented with periodic in-service orientation programmes and refresher courses.

Conclusion

Information communication technologies decidedly have a higher destiny and indeed a longer stay in opposition to being just a teaching aid in itself. Teachers hence from the conventional role of a disseminator of knowledge should acquire yet another major role to play; integrating technology in the teaching-learning process. In this context the newly popular integrative and transformative theoretical framework becomes decisive. As discussed earlier, the core constituents of TPACK include Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK). The synthesis of all these three systemic constituents are what is imperatively desired. To have a lasting and desired impact, this integration needs to be carried out at different levels; first at the teacher education level, second at the orientation level soon after joining the teaching career and finally at periodical intervals during refresher courses. This is preeminently profound because technology changes rapidly, learners pick them up fast and teacher should not be found out of the ark.

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