



ASSIMILATION OF ICT IN PEDAGOGY: THE NEW KNOWLEDGE-BASED GLOBAL SOCIETY

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ABSTRACT

We are living in a digital eon. The education structure and practice to a great extent is opinionated by the exceedingly rapid technological changes. The amalgam form of learning integrates both traditional learning and e-learning, which is technically known as blended learning (BL). ICT- based educational environment is more conducive to learning than a traditional learning. The integration of ICT has far reaching consequences for the teacher's role and curriculum structure. The learners play a reflexive role in traditional classroom but digital technologies enable the learners to access educational material over the teacher and they can dynamically and unaccompanied make right use of their cognitive skills.

Keywords: ICT assimilation, Blended learning (BL), T-Pack, Knowledge-based society

INTRODUCTION

ICT encompasses both the internet-enabled sphere as well as the mobile one powered by wireless networks. It also includes antiquated technologies, such as landline telephones, radio and television broadcast alongside cutting-edge ICT pieces such as artificial intelligence and robotics. ICT is sometimes used synonymously with IT (for information technology); however, ICT includes comprehensive list of all components related to computer and digital technologies than IT. The list of ICT components is exhaustive, and it continues to grow. During the past few decades, ICT has provided society with a vast array of new communication capabilities and has

fundamentally changed the way we live now (Rout, 17). The emergence of the 'knowledge-based' society is changing the global economy and the status of education. ICT-enabled education can also be a solution to the growing demands for enrolments in higher education in India. ICT-enabled education can do wonders that no one can imagine and help pave way for the creation of virtual universities in the long run.

The 1998 UNESCO World Education Report, *Teachers and Teaching in a Changing World*, states: "New possibilities are emerging which already show a powerful impact on meeting basic learning needs, and it is clear that the educational potential of these new possibilities has barely been tapped." (1998 UNESCO World Education Report, p. 19)

AN ARCHETYPE SHIFT IN THE LEARNING PROCESS:

In disparity to the conventional teaching-learning archetype, a new archetype of the teaching-learning process is rising, which surrounds the following views of the human learning process:

- **Learning is a natural process:**

The natural circumstance of the brain is to learn, hear or sense however, not everyone does it in the same way. There are diverse perceptions, perceptual and personality traits that must be considered in the design of learning experiences for the individual student.

- **Learning is a social process:**

As Vygotsky (1978) noted long ago, learners learn preeminent in collaboration with peers, teachers, parents, and others when they are actively engaged in meaningful, interesting tasks.

- **Learning is an active and not a passive process:**

To allow students to progress in the direction of competence, they must be actively occupied in the learning process; through activities such as solving real problems, producing original writing, completing scientific research projects, dialoguing with others on important issues, providing artistic and musical performances, and constructing physical objects.

- **Learning may either be linear or non-linear:**

Cognitive theories see learning as a reorganization of knowledge structures. The knowledge structures are stored in semantic memory as schema or cognitive maps. Students "learn" by augmenting, combining, and rearranging a collection of cognitive maps. Some knowledge domains, such as mathematics, may perhaps be learned through a linear approach, while social science non-linearly.

- **Learning is integrative and contextualized:**

Pribram's holistic brain theory suggests that information presented globally is more easily assimilated than information presented only in a sequence of information elements (Pribram, 1991). It is also easier for students to see relations and to make connections.

- **Learning is based on a strength model of student abilities, interest, and culture.**

The diversity and individual differences among learners are valued and the learning process is designed to build on the strengths and assets brought by the learner to the classroom.

- **Learning is assessed through task completion, products, and real problem solving of both individual and group efforts.**

Rather than simply evaluating students through paper and pencil tests, assessments are made using portfolios of actual performances and work in both collaborative and individual learning tasks.

T-PACK FRAMEWORK FOR TEACHERS: ICT IN TEACHING AND LEARNING

At the heart of the T-PACK framework, is the complex interplay of three primary forms of knowledge: Content (CK), Pedagogy (PK), and Technology (TK). The T-PACK framework goes further by emphasizing the kinds of knowledge that lie at the intersections between three primary forms: Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK) and Technological Pedagogical Knowledge (TPK). This further combining it as Technological Pedagogical Content Knowledge (T-PACK).

- **Content Knowledge (CK)** – “Teachers’ knowledge about the subject matter to be learned or taught. This knowledge would include knowledge of concepts, theories, ideas, organizational frameworks, knowledge of evidence and proof, as well as established practices and approaches toward developing such knowledge” (Koehler & Mishra, 2009).
- **Pedagogical Knowledge (PK)** – “Teachers’ deep knowledge about the processes and practices or methods of teaching and learning. They encompass, among other things, overall educational purposes, values, and aims. This generic form of knowledge applies to understanding how students learn, general classroom management skills, lesson planning, and student assessment.” (Koehler & Mishra, 2009).
- **Technology Knowledge (TK)** – “Knowledge about certain ways of thinking, working with technology that includes understanding information technology broadly enough to apply it productively at work and in everyday life, being able to recognize when information technology can assist or impede the achievement of a goal, and being able continually adapt to changes in information technology.” (Koehler & Mishra, 2009).
- **Pedagogical Content Knowledge (PCK)** – “PCK covers the core business of teaching, learning, curriculum, assessment and reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy” (Koehler & Mishra, 2009).
- **Technological Content Knowledge (TCK)** – “An understanding of the manner in which technology and content influence and constrain each other.. Teachers need to understand which specific technologies are best suited for addressing subject-matter learning in their domains and how the content dictates or perhaps even changes the technology-or vice versa” (Koehler & Mishra, 2009).
- **Technological Pedagogical Knowledge (TPK)** – “An understanding of how teaching and learning can change when particular technologies are used in particular ways. This includes knowing the pedagogical affordances and constraints of a range of technological tools as they relate to disciplinarily and developmentally appropriate pedagogical designs and strategies” (Koehler & Mishra, 2009).

Thus, “**Technological Pedagogical Content Knowledge (T-PACK)** is underlying meaningful and deeply skilled teaching with technology. T-PACK is the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; and how technology can help redress some of the problems that students face; knowledge of students’ prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones” (Koehler & Mishra, 2009).

CONCLUSION

With an archetype shift in learning process, T-PACK Framework in Learning Process becomes vital and demanding. With T-PACK framework, the teacher of today should be in a position to integrate technology into teaching learning process. ICT, if used creatively, can make a big difference in the way teachers teach and students learn and can help students acquire 21st century skills like digital literacy, innovative thinking, creativity, sound reasoning and effective communication. ICT can help in enhancing the quality of education through blended learning by supplementing the traditional talk and chalk method of teaching. The integration of ICT into classroom practice is argued to have far reaching consequences for the teacher’s role and curriculum structure. The teacher has traditionally been seen as “someone who dispenses knowledge, someone who lectures, tells, feeds, disseminates, covers the materials....The student sits passively when the teacher is on show” (Huntington University webpage, 2011,para.1). The teacher has now assumed such ICT-oriented roles as a facilitator, collaborator, learner, motivator, researcher, and participant (Harden & Crossby, 2000; Carballo-Calero, 2001; Mardelena 2002; DGEC 2003; Fairman, 2004).

The ongoing National Mission on Education through ICT (NMEICT) is a major initiative of the Govt. of India in this direction with an aim to leverage the potential of ICT in providing high quality personalized and interactive content, free of cost, to all the learners.

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