TEACHER PROFESSIONAL DEVELOPMENT

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Abstract

*Computer technology plays an integral role in personal and professional lives. The ability LOPMNT to utilize this technology has become the new literary for 21ˢᵗ century and is of critical importance in enabling India to compete successfully in the global community. For future generations to maximize their capability to operate within competitive and technologically driven economics, it is critical to foster computer abilities at every level of schooling process and teachers are central to this endeavour. **Seemann (2000)** found that just as literary and numerary have become imperative in school education, so too has technology. The recent inquiry into the provision of public education **Esseon, Johnson** and **Winson (2002)** has highlighted significant concerns relating to teacher professionalism including a critical need to redress the lack of fiscal support for teacher Professional development. In particular teacher professional development in computer technology has become a major priority at state and national level, need to skilled in the use and choice of variety of teaching methods, be skilled in variety of appropriate research methodologies and ensure their continunity professional development by upgrading knowledge and teaching skills.*

Across Indian researches reports that there are deluge of challenges cofronting the educative process in general and application of ICT's in teacher performance development in particular. As information and communication technologies are widely believed to be important potential levels to introduce and sustain education reforms efforts. Despite evidence of increasingly widespread use of ICTs in education institution around the world, however there is little guidance available for policy makers and donor staff specifically targeted at countries contemplating the use of ICT's to help countries meet education related millennium development goals. Despite over ten years of investment in ICT's to benefit teaching and learning in every developing countries, little is known about their substantive impact on teaching and learning processes and outcomes indeed.

The release of the review of teacher education in NSW **Rangey** (2000) highlighted the critical importance of computer education for all pre service and practicing teachers. In this report ICT was seen as one of the most significant challenge how comfronting teacher education, teacher and schools.

Numerous studies point to limitations of professional development progress offered to practicing teachers   **Hiederhavser (2001), Rwsel** and **Bradley (1997), William(1998).** Various alternative modes are beginning to be proposed and tried but **Lurdin (2002)** point out, despite years of concerted effort, it is unlikely that more than 50% of teacher have a basic standard of computer skills.
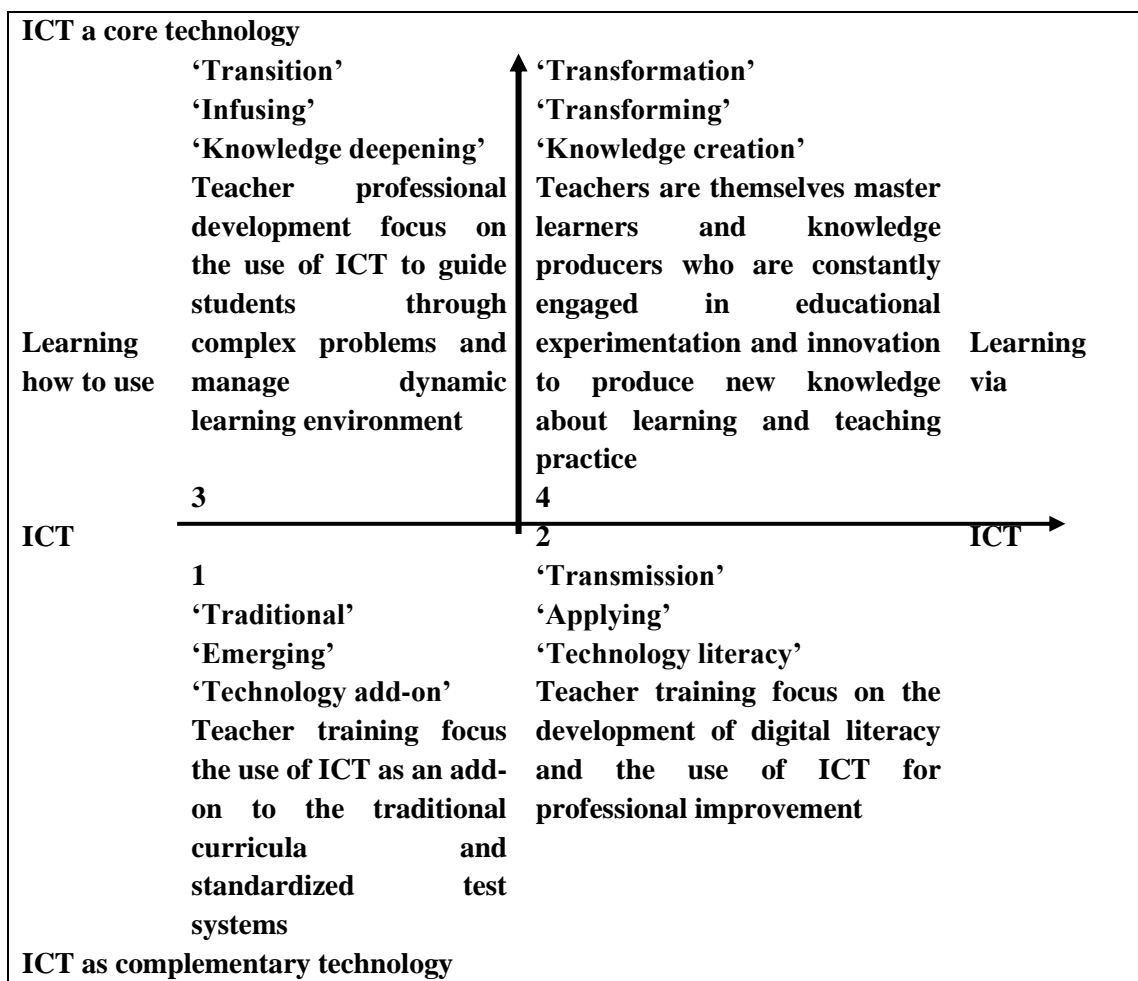
The impact of ICT use of learning outcome is unclear and open to much debate.

There is disconnect between rationales most often put forward to advance the use of ICTs in education and their actual implementation.

A Model Perspective

Shafika (2006) points to a general absence of conceptual clarity on the objectives of TPD for ICT initiatives in the African region. **Mandinach (2005)** suggests that the lack of clarity is pervasive in education systems globally, noting that while educational institutions seem to be aware they should be joining the ICT integration movement, they are not clear as to the purpose or the gains. **Kirschner** *et al* **. (2008)** note that while much of the literature advocates that teachers should develop ICT skills, there is a lack of discussion on what this actually means or looks like in practice. They suggest a research divide between mainstream and ICT specialist fields in TPD i.e (Teacher Professional Development) whereby mainstream research pays little attention to ICT and ICT researchers pay little attention to research conducted on TPD.

The **UNESCO (2008c)** Information and Communication Technology - Competency Standards for Teacher's **(ICT-CST)** project attempts to bridge both mainstream and ICT specialist domains in a holistic framework for a modular continuum of ICT integration in all TPD programmes - moving from *technology literacy*, through to *knowledge deepening* to *knowledge creation* purposes which develop increasing capacity for teacher empowerment in the utilization of ICT as a tool to enhance the quality of learning in below figure:

ICT a core technology		
	'Transition' 'Infusing' 'Knowledge deepening' Teacher professional development focus on the use of ICT to guide students through complex problems and manage dynamic learning environment **3**	'Transformation' 'Transforming' 'Knowledge creation' Teachers are themselves master learners and knowledge producers who are constantly engaged in educational experimentation and innovation to produce new knowledge about learning and teaching practice **4**
Learning how to use		**Learning via**
ICT	**1** 'Traditional' 'Emerging' 'Technology add-on' Teacher training focus the use of ICT as an add-on to the traditional curricula and standardized test systems	**2** 'Transmission' 'Applying' 'Technology literacy' Teacher training focus on the development of digital literacy and the use of ICT for professional improvement	**ICT**
ICT as complementary technology		

An Institutional Perspective

Pulkinnen (**2009**) explains that ICT is more a process than a tool, and in the context of ICT innovations, 'ICT innovation is more a new process to be developed than a technology (a tool) to be applied' (ibid.: online). Benchmarking ICT innovation in TPD programmes in a meaningful way would require institutions to articulate clearly the new process around which the benchmarks will cohere. **Jochems**, **Van Merrienboer** and **Koper** (**2004 cited in Robertson, 2008**) propose that a new process for ICT integration needs to address organizational, technological and pedagogical perspectives. The benchmarks of an institutional technology management plan can be independently developed from the benchmarks of the management plan for teaching and learning. If an institution is unable to establish a coherent relational approach to technology integration that is driven by its policy and vision definition (Table 1), ICT planning activities may often overlook the needs of students and teachers (Ellis and Moore, 2006).

Table : Three Approaches for ICT Integration in Teacher Professional Development

Policy & Vision	Technology literacy	Knowledge Deepening	Knowledge Creation
Curriculum & Assessment	Basic Knowledge	Knowledge Application	21st Century Skills
Pedagogy	Integrate Technology	Complex Problem Solving	Self Management
ICT	Basic Tools	Complex Tools	Pervasive Technology
Organization & Administration	Standard Classroom	Collaborative Groups	Learning Organizations
Teacher Professional Development	Digital Literacy	Manage & Guide	Teacher as Model Learner

Benchmarking a new process of ICT integration allows an institution to reflect on three fundamental questions in the manner of a reflective practitioner **(Schon, 1983),** to evaluate how its system is working in achieving its mission for ICT integration, and how it can improve. The questions are:

1. What is the quality model underpinning the teaching and learning system? (its theoretical basis)

2. What are the mechanisms in the system that allows the institution to reflect on and improve current practice?

3. What are some of the strategies used to remove impediments to the successful implementation of ICT in the teaching and learning system? (**Biggs 2001:223**)

Conclusion

The aim of this paper was to provide an overview of practice and frameworks for ICT integration in Teacher Professional development.

Concepts linked to the key terminology of Information and Communication Technology, Teacher Professional Development and ICT Integration were examined.

The paper sought to also clarify global agendas that are driving the momentum for ICT integration in education systems in the developed and developing worlds and the paradigm shift that this is creating in education generally and in teacher professional development in particular.

Finally models for ICT in Teacher Professional Development that have emerged from the International Research were examined and the role of Benchmarking as a mechanism for institutional reflection, development and improvement on its mission for incorporating ICT into programmes that will contribute to the national vision for a knowledge-based society. ICT into programmes that will contribute to national vision for knowledge based society.