Best Practices in Teacher Professional Development

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Abstract: This paper presents examples of practices in teacher professional development for ICT in Education. To be effective and successful teacher professional development should be of high quality and relevant to teachers' needs. Education changes, in particular those changes associated with the rhetoric of the global information society, require staff development activities. In order for changes to be affected in the classroom, additional technical and pedagogical support is necessary. Professional development programmes should include all staff that are to contribute to the implementation of the intended changes, principal, teachers, and technical and administrative support personnel. In this the focus will be on teachers. Apart from the students themselves, teachers and principal are the main agents of change at the institution level.
Key words: Models, Best Practices, Teacher Professional Development.

I. Introduction

Information and communication technologies have brought new possibilities to the education sector, but at the same time, they have placed more demands on teachers. They now have to learn how to cope with computers in their classrooms, how to compete with students in accessing the enormous body of information, particularly via the internet and how to use the hardware and software to enhance the teaching/learning process. Bhatta (2008) would contend that unless teachers are fully comfortable with new approaches to teaching inherent in ICT integration, providing students with computers and educational content alone will have limited impact on the teaching and learning process. It is also essential that teachers understand that ICT-based education only changes their role, rather than minimizing or eliminating their role altogether. Butler and Leahy (2003) would argue that there is a need to develop teachers' thinking to that of 'critical judgment' (Papert, 1990) to ensure that teachers are not limited by their current understandings and experiences of digital technologies as a somewhat intimidating new dimension to their classroom practices. They add that there is a need for teachers to be provided with opportunities to reflect on their practice as they make use of the technologies so that they can become active generators rather than passive consumers of knowledge. Teachers they believe must be empowered as transformative agents who through professional development should cultivate "knowledge of practice" (ibid: 2).

II. A New Paradigm for Teacher Education

Swarts (2008) notes the need for teachers "to be adequately and appropriately trained through pre-service and in-service teacher education programmes to teach ICT Literacy". She considers that access to ongoing and appropriate ICT professional development is a prerequisite for all teachers, if they are to improve their confidence and competence in using ICT to meet the needs of all their students. Pelgrum and Law (2003) believe that teacher education, and in particular initial teacher education needs to undergo changes to prepare teachers for the challenges of the information age. Bhatta (2008) considers that effective teacher preparation in ICT-based education requires adequate training in three areas:

- Information technology literacy
- Child-centric interactive teaching
- Integration of ICT-based instruction in child-centric interactive teaching.

She notes that the most straight forward task is making teachers IT literate with the greatest challenge lying in the third area of ICT integration. Pelgrum and Law (2003) point to empirical data from cross national surveys

suggesting a lack of ICT training opportunities in pre and in-service programmes generally. Furthermore the courses available predominately focus on the basic technical skills to the determent of courses related to the gap areas of pedagogical principles. Loveless (2000 cited in Butler and Leahy 2003) also notes the tendency in current international models of professional development to focus on evidence of *teaching competence* rather than *confidence in change*. Such approaches can leave teaching and learning largely unaffected in schools and can greatly hinder the potential of digital technologies to radically alter the manner in which teaching and learning are constructed. They also inhibit the opportunity for critically examining education systems and for questioning, "The very nature of what we understand by learning" (GoI, 2002: 141 cited in Butler and Leahy, ibid). Hadad (UNESCO, Online) contends that a new paradigm for teacher education must emerge that replaces one-shot training with lifelong professional preparedness and development of teachers along a continuum of:

- Initial preparation
- Structured opportunities for retraining, upgrading and acquisition of new knowledge and skills
- Continuous support.

III. Models for Teacher Professional Development

Teacher professional development (also know as "in-service" or "teacher education") is the instruction provided to teachers to promote their development in a certain area. It is the tool by which policymakers' visions for change are disseminated and conveyed to teachers. Though the recipient of teacher professional development is the teacher, the ultimate beneficiary is the student. Thus, teacher professional development is often the most critical component of any ICT project.

According to Gaible and Burns (2005) teacher professional development can be divided into three broad categories:

1. **Standardized Teacher Professional Development:** The most centralized approach, best used to disseminate information and skills among large teacher populations
2. **Site-based Teacher Professional Development:** Intensive learning by groups of teachers in a school or region, promoting profound and long-term changes in instructional methods
3. **Self-directed Teacher Professional Development:** Independent learning, sometimes initiated at the learner's discretion, using available resources that may include computers and the Internet.

The three models are described in more detail below.

1. Standardized Teacher Professional Development

Standardized teacher professional development typically represents a centralized approach, involving workshops, and training sessions and in many cases the cascade model of scaled delivery. Standardized, training-based approaches generally focus on the exploration of new concepts and the demonstration and modeling of skills. When employed in accordance with best practices standardized approaches can effectively:

- Expose teachers to new ideas, new ways of doing things and new colleagues.
- Disseminate knowledge and instructional methods to teachers throughout a country or region.
- Visibly demonstrate the commitment of a nation or project to a particular course of action.

Pros:

- Standardized teacher professional development can be very effective in building awareness about computers, learner-centered instruction and/or new curricula.
- In the cascade model (training the trainer), a small group of teachers are selected to receive intensive training before returning to their own institutions to provide ICT training for their peers-serving as 'champion teachers".

- The cascade model has tremendous potential particularly with regard to support provision at institution level.

Cons:

- The model tends towards a technical rationalist approach.
- The approach hovers on a 'one fit for all' principle for upgrading teachers' knowledge base that is independent of context.
- Teachers are constructed as *knowledge consumers* with the responsibility to bring what they have learned back to their classrooms and put it into practice.
- Workshops taking place at one time and in one location without on-going support rarely result in effective changes for teaching and learning.
- Weaknesses in the cascade approach are linked with a tendency to develop the vanguard team's user skills as opposed to their provider skills.
- Cascade training flows down through levels of less experienced trainers until it reaches the target group; in the process, complex information tends to be lost.
- Without incentives to motivate teachers to participate, collaborate and experiment with new strategies, teachers may be unwilling to 'take advantage' of their 'more knowledgeable' colleagues in the teacher professional development 'vanguard teams'.

To bring about change will take more than the exchange of information typical of "make and take" top-down centralized models for professional development programmes (Dede, 1999 cited in Butler and Leahy, 2003). Research findings indicate that informal contact and communication between teachers is the most prevalent form of transferring ICT knowledge.

2. Site-based Teacher Professional Development

Site based teacher professional development often takes place in schools, resource centres or teachers colleges. Teachers work with local ("in house") facilitators or master teachers to engage in more gradual processes of learning, building master of pedagogy, content and technology skills. Site based teacher professional development often focuses on the specific, situational problems that individual teachers encounter as they try to implement new techniques in their classroom practices.
Site-based models tend to:

- Bring people together to address local issues and needs over a period of time
- Encourage individual initiative and collaborative approaches to problems
- Allow more flexible, sustained and intensive teacher professional development
- Provide ongoing opportunities for professional learning among a single set of teachers (Gaible and Burns, 2006)

Pros:

- Many studies have pointed to the importance of site-based teacher professional development programmes which can be linked to change and innovation at the classroom and school level (e.g. Anderson, 1996; Somekh and Davis, 1997; Potter and Mellar, 200; cited in Pelgrum and Law, 2003).
- Study findings also suggest that site-based teacher professional development can be most effective when delivered "in connection with a school development plan" (ibid).
- The tendency in site-based teacher professional development is to support the establishment of teacher communities as communities of practice in order to foster the development of the new learning culture desired (Wenger, 2000 cited in ibid.).

- The focus is on aiding the project participants to not only implement new approaches but to "unlearn the beliefs, values, assumptions and culture underlying their practice"(Dede, 1999:1 cited in Butler and Leahy, 2003).

Butler and Leahy point to value of incremental learning associated with site-based communities of practice-where every participant has their own perspectives, values and assumptions that become part of the process of constructing new understandings, as in "forming and reforming frameworks for understanding practice: how students and teachers construct the curriculum" (Cochran-Smith and Lytle, 1999 cited in ibid.).

Cons:

- Site-based approaches are time- and labour intensive requiring locally-based teacher professional development providers skilled in facilitation, instruction, content, curriculum, assessment and technology, as well as in mentoring teachers to find solutions in low-resource environments appropriate to their needs and contexts.
- The establishment and maintenance of a network of facilitators to meet the needs of large-scale teacher professional development programmes would be a challenge for any educational system.

3. Self-directed Teacher Professional Development

In self-directed teacher professional development, teachers are involved in initiating and designing their own professional development and would share materials and ideas as well as discuss challenges and solutions.

Pros:

- This approach to professional development helps teachers to become models of lifelong learners.
- Informal versions of self-directed teacher professional development find teachers seeking out experience colleagues for advice or searching for lesson plans on the Internet.
- The emergence of on-line communities of teachers to provide support in professional development across a range of subject areas and themes (Pelgrum and Law, 2003)

Gaible and Burns (2005) consider that while teachers should certainly be encouraged to participate in ongoing, self-motivated learning, self-directed activities should not be used as the primary means of providing teacher professional development. Instead, they should be used to complement and extend standardized and/or site-based teacher professional development.

IV. Teacher Competency Standards

Teacher professional programmes whether initial or in-service will constitute an important component of educational improvement only if the professional development is focused on specific changes in teacher classroom behaviors and particularly if it is aligned with other changes in the educational system. The goal of the UNESCO (Online) "ICT Competency Standards for Teachers" (CST) project is to combine a focus on ICT skills development with emergent views in pedagogy, curriculum, and school organization. The Standards are designed for the professional development of teachers who want to use ICT skills and resources to improve their teaching, collaborate with colleagues, and perhaps ultimately become innovation leaders in their institutions.

V. Conclusion

A change agenda "in which the technology is fully integrated into the learning process" constitutes a complex pedagogical scenario according to Noss and Pachler (1999) where "the teacher's role will be altered fundamentally". Tinker et al (2007) in their paper on recommendations for large scale 1:1 implementations, concur that teacher professional development programmes should not be planned as singular interventions where teachers are simply exposed to opportunities for tinkering with the new technology. Instead, there needs to be a continuous cycle of exploration, reflection, discussion, application, and knowledge building, through which teachers grow

professionally and their students gain deeper knowledge. The authors caution that teacher professional development can constitute the largest cost in implementing effective ICT projects, while indicating strategies for reducing cost by concentrating on teaching and avoiding overemphasizing the technology. In an analysis of policies and practices which can address the challenge of promoting change in institution cultures where habits are deeply ingrained, Elmore (2000 cited in Farrell 2007) makes this key observation.

People can make fundamental transitions by having many opportunities to be exposed to the ideas, to argue them into their own normative belief systems, to practice the behaviors that go with those values, to observe other practicing those values, and, most importantly, to be successful at practicing in the presence of others (that is, to be seen to be successful). The most powerful incentives reside in the face-to-face relationships among people in the organization, not in external systems.

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