

empowerICT™: In-Service Teacher's Learning to Teach with Technology

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Introduction

In a recent report on the use of technologies in education in Asia and the Pacific 2003-2004, Farrell and Wachholz (2003) report several trends in the use of information and communications technologies (ICT) for education. Among these trends are: the ICT infrastructure, the use of knowledge management systems, the development and use of learning object repositories, a growth in open schools, the use of mobile technology, and the need for combining old with new technologies. The need for teacher professional development is also an issue identified by Farrell and Wachholz as well as by several international studies (Vrasidas & Glass, 2004).

The goal of this paper is to discuss the theoretical framework and preliminary evaluation findings behind empowerICT™, a professional development program that focuses on integrating ICT in teaching and learning in primary and secondary education. It consists of teacher training modules, support documents, outcomes based assessment, an online portal, and ongoing support. empowerICT™ is based on research conducted by international organizations around the world (e.g. ISTE, UNESCO, EU). This project is a result of collaboration between Ministries of Education in Asia, local education agencies, schools (including principals, teachers, and students), Knowledge Director (a learning solutions company), a team of international and local experts, and Microsoft. The project is

managed and funded by Microsoft. The project has been launched as a pilot in Thailand and Philippines in collaboration with the local Ministries of Education.

Theoretical Framework

Efforts at technology integration provoke a variety of responses from teachers that range from enthusiasm, skepticism, to fear and uncertainty. A long history of technology use in education reveals that the first reaction is to use new technology in the same traditional ways as the old technology (Cuban, 1986; Means, 1994). Old curricula and pedagogical approaches should be reformed, and if necessary replaced, to take advantage of the affordances of the new media. Cuban's (1986, 2001) research has shown that computers are used less often in the classroom than in other organizations. In order for education innovations to succeed, systemic approaches and the collaboration of all stakeholders, including teachers, are required.

A major issue emanating from research on teacher preparation has to do with the provision of ongoing teacher support to continue integrating ICT in their teaching. Teachers do not just need support in the form of a workshop, they need to have access to support throughout their careers as they try to integrate technology into their curricula and seek to improve their teaching. One-time workshops and teacher preparation during the course of a semester are not sufficient. A model that worked very well in several

projects is the online community model (Seels, Campbell, & Talsma, 2003; Vrasidas & Glass, 2004).

Description of empowerICT™

empowerICT™ is a combination of professional development and collaborative curriculum development program that focuses on preparing teachers to integrate ICT in teaching and learning in primary and secondary education. The structure of the program is based on a blended approach to professional development and it comprises of the following: online and face-to-face teacher training modules, support documents, collaborative curriculum development, outcomes-based assessment, and an online portal. One of the goals of the project is to develop a sustainable community of teachers integrating ICT in their classrooms and who will share expertise in the Asia Pacific Region.

The set of tentative goals for empowerICT™, as they have been developed thus far are:

- To empower teachers to integrate ICT into their classroom
- To promote collaborative curriculum development
- To improve teaching and learning in participating schools
- To facilitate reform in education policy, curriculum, pedagogy, and assessment
- To promote systemic, systematic, and sustainable change in education

It should be noted that the pilot also attempts to: document in detail the processes of the program, clearly define its scope, and focus it on the local stakeholders' needs; collect data in order to improve the project; develop a theoretical framework to guide future project deployments; establish an evaluation framework to guide evaluation of project activities; and develop case studies

that will be used to present the project and document its success and challenges.

The core framework was developed by an international team of experts in collaboration from experts in the participating countries, and it is based on research and development from international organizations like UNESCO and ISTE. The life-cycle of the project lasts for 20 weeks. During the first 5 weeks the international and local expert teams engage in a collaborative curriculum process and localization and preparation of material in collaboration with, local agencies, administrators, ministries of education, and teachers from each of the participating country. Once the workshop materials are localized and translated in the local language, a 2-day workshop is offered to teachers and principals. The goals of the workshop are to help teachers understand when to use ICT to support specific outcomes, develop lesson plans integrating ICT within specific subject matters, and develop and implement performance assessment for ICT specific outcomes. Administrators will better understand what technology can offer to their schools, how to plan for integration and how to support teachers. Following the workshop, is the 10-week implementation phase during which teachers develop 10 lesson plans (1 per week), try them out in their classrooms, and discuss them with peers and the local team of experts. They reflect on the successes and challenges of each lesson using an online discussion forum and document their thoughts in an online journal. During the 10 week implementation stage, face-to-face support, continuous one-on-one and group support is available to teachers from local experts through out the duration of the project. In addition, teachers are encouraged to collaborate with peers within their school, and across schools, to exchange ideas, review each other's work, and provide feedback. An online portal is used where teachers have access to a variety of services

including information about the project, discussion forum to exchange ideas with peers and experts, a lesson plan and activities depository where they post their work and receive feedback from peers, online support, and other online resources. At the end of the 10 week period, follows the 5 week debriefing and evaluation stage during which data are collected in collaboration with all stakeholders, and a wrap up event is organized during which teachers showcase theirs and their students' work.

Evaluation Method

The goals of the evaluation were:

- Does the project meet its objectives?
- Were the expected outcomes delivered as planned?
- Is the final product of acceptable quality?
- What recommendations can be made about the appropriateness and usefulness of empowerICT™?

Data collection was driven by the evaluation goals and questions addressed in this project. In this case, the evaluation was formative in nature. All stakeholders had a sincere interest in improving the project. Data were collected from:

- Semi-structured interviews with key stakeholders involved in the project including local team of experts in each of the countries, ministry of education and department of education officials, local agencies' personnel, teachers, and principals. All interviews were tape-recorded and transcribed.
- Observations of teachers implementing the lesson plans they developed integrating ICT in their classrooms (two observations were conducted for each of the 10 teachers in Philippines and 10 teachers in Thailand who participated in the pilot).

- Focus group presentations and discussions of the project to teachers, ICT coordinators, and administrators.
- Document review of all material developed and used in the pilot.
- Collection and review of teacher lesson plans and samples of student work.
- Usability testing has been conducted throughout the development process of the portal.
- Email messages, discussion contributions, and log files were collected and tabulated.
- Detailed memos were kept by the evaluation team throughout the production and implementation of the project.
- Evaluation surveys administered at the end of the 2-day workshops.

Data Analysis

For data analysis, we followed two stages: the inductive and deductive (Erickson, 1986). Interview transcripts, class documents, meeting minutes, memos, log files, and survey results were all analyzed. Upon entering the inductive stage, we organized all the transcripts, field notes, and documents. We used data displays, concept maps, and tables to illustrate findings of the evaluation. After we collected and organized all the data, we read through the data three times and generated assertions. Once we generated assertions from the data as a whole, we entered the deductive stage. In this stage we engaged in detailed examination of the data corpus and looked for data to confirm or disconfirm our assertions.

Findings

- Preliminary findings indicate that there is a general feeling among all stakeholders that the project meets its goals and all stakeholders are satisfied with the results of the pilot thus far. The project's website, support

documents, online and face-to-face activities were of good quality and high rigor.

- Following a systemic and systematic approach engaging all stakeholders in the process provided a sense of ownership to all participants. This sense of ownership was translated, in most of the cases, into a sense of commitment for making the project succeed. As one of the principals stated: "Often times we get people come into our school and tell us what to do. In this project, we all had input and we had a say on how and when the project should be implemented. This made it easier for us to get our teachers to support the project."
- Access to technology remains an issue for schools in the Philippines and Thailand. Schools which participated in the pilot had student populations that ranged from 1000 to 4000 students. Computers are not available in the individual classrooms, but in computer labs. The number of labs available ranged from 4 to 13 labs equipped with 20-40 computers each lab. Computers are taught as a separate subject matter. Therefore, scheduling for computer use becomes a serious issue, since labs are fully booked throughout the day for computer classes.
- Teachers and administrators felt that a lot of the issues relating to time release, duties, compensation, and other policies and requirements need to be clearly defined. While conducting this evaluation we have discovered a discrepancy of how teachers get compensated in the various schools. Furthermore, sometimes teachers felt that their administrators and local ministry were not doing enough to support them.
- All the issues identified thus far have strong implications for education

policy. Policies regarding teacher incentives and compensation, technology infrastructure, curriculum and assessment, are issues that need to be addressed at the local school and district level, as well as at the national level with policies from ministries and departments of education.

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