H. Ogata et al. (Eds.) (2010). Doctor Student Consortium Proceedings of the 18th International Conference on Computers in Education. Putrajaya, Malaysia: Asia-Pacific Society for Computers in Education.

Effectiveness of a Strategic Training Module of ICT Integration in Classroom Teaching and Learning Process to Improve Teachers' Professional Development in Principles of Accounting Education

Rashidah HASSAN
Curriculum Development Division, Ministry of Education, Malaysia
rashidah@moe.gov.com.my

Abstract: This research aims to study the effectiveness of a strategic training module utilizing ICT integration in classroom teaching and learning process to improve teachers' professional development in Principles of Accounting education at Malaysian secondary school level using accounting educational simulation courseware, ASSETBase. Series of research and training activities conducted from August 2005 to June 2007 showed that accounting teachers were enthusiastic and ready to embrace the idea of incalculating ICT integration into their classroom teaching and learning. The findings also suggest that ICT integration has become a key factor in improving teachers' professional development. However, it needs to be orchestrated together with other concerted efforts. But for various reasons, it could not be implemented. Variables factor used in this study are the cognitive aspects, competency on ICT skills, psychosocial changes in attitude, and the desire to be proficient and persistent. The contributions of the study are discussed together with the proposed research questions and approaches in this paper. Preliminary results demonstrated a significantly higher level of teachers' readiness in implementing the new pedagogical approach.

Keywords: Classroom integration of ICT, Technical Pedagogical Knowledge and Skill (TPCKS) framework, teachers' professional developments, CIPP approach program evaluation, Principles of Accounting

Introduction

Principles of Accounting is a basic subject in accounting which deals with book-keeping and fundamental accounting concepts [1]. The subject aims to equip students with the knowledge and basic skills of accounting. It is also aimed at enabling them to practice and to interact accounting confidently as to generate interest and understanding towards business and industry. Presently, students at Sijil Pelajaran Malaysia (equivalent to "O") level are taught to acquire knowledge and skills through repeating practice of creating, keeping and maintaining full sets of ledger and journal entries, which is a long and routine process. With the introduction of computerized accounting courseware in classroom teaching, it is hope the processes can be shorten significantly.

The Ministry of Education, Malaysia (MoE) has taken initiatives to train teachers teaching Principles of Accounting subject to use accounting educational simulation courseware, ASSETBase in their classroom teaching and learning. Throughout 2005 and 2006, two thousand seven hundred and thirty (2,730) teachers underwent trainings as part of the initiative formulated by MoE to enhance their skills and knowledge at using the courseware as a teaching and learning tools, and in preparing a computerized full-cycle accounts. The evaluation from the above training sessions reflected teachers' positive perceptions towards using ICT in classroom teaching and learning, and in using the ASSETBase simulation courseware in general [2]. In supporting the initiatives, one

thousand three hundred and sixty five (1,365) national academic and technical schools were equipped with the ASSETBase courseware. MoE initiatives also highlighted the needs of redesigning the curriculum and instructional materials, revising students' achievement tests and improving the teacher training system. The height of the initiatives shows two memorandums of understandings were signed on 25th June 2007 between MoE and relevant professional accounting bodies: the London Chamber of Commerce and Industry International Qualifications (LCCI) and the Association of Chartered Certified Accountants (ACCA). As for the needs to redesign (upgrade) the curriculum and instructional materials, modular lesson plan was developed with intention to improve the quality of accounting teachers' professional development and to counter issues reported by teachers through the Accounting Teachers' Online Monitoring Systems. The lesson plan was later endorsed by representatives of accounting education stakeholders in the country. Various levels of lesson plan were introduced and analyzed as to identify the suitability of the module presented to suit a minimum availability of ICT infrastructure at individual school. In this study, the lesson plan will then further enhancement as to transform it into a strategic training module on ICT integration.

1. Literature Review

Generally, three objectives are distinguished for ICT in education: ICT as the object of study, ICT as an aspect of a discipline or profession; and ICT as a medium for teaching and learning. In education, ICT as the object refers to learning about information and communication technology, which enables students to use ICT in their daily life. ICT as an aspect of the discipline refers to the development of ICT skills for professional or vocational purposes. ICT as a teaching and learning medium focuses on the use of ICT for the enhancement of the learning process of students [3]. In accounting education, ICT can be used for the purpose of functioning as an aspect of the accounting discipline, as well as, a medium for teaching and learning. Studies have shown that teachers begin to develop ways of improving their knowledge and skills in teaching and learning by creatively exploit readily available ICT courseware into their subject teaching [4].

1.1 Classroom Integration of ICT

The integration of ICT in a classroom enhanced the teaching and learning process. A formal classroom-based training of IT using case studies, simulations, interactions with experienced professionals and other similar techniques helps the presentation of subject matter easier. In the accounting discipline, ICT plays a major role in developing the skills sets and professionalism necessary for teaching [5, 6]. ICT acts as a catalyst for speedier understanding of subject matters for teachers and students (ability to handle full sets of account) as well as acts as tools for teaching and learning (ability to embed ICT into the classroom lesson plan). Thus, through the use of ICT students can relate computer-based business systems within a financial accounting course and perform accounting tasks competently in the IT environment.

1.2 Pedagogical Framework (PF)

Technological Pedagogical Content Knowledge (TPCK) framework by Mishra and Koehler [7] was similar to the PF research study model currently undertaken except with the absence of the skills component. As implied by Willis, Thompson, and Sadera [8] we subscribed the

skills component into TPCK, the PF study facilitates for smooth integration of ICT into accounting teaching and learning. The TPCKS (now known as Technological Pedagogical Content Knowledge and Skills) framework then became the model to develop strategies to improve teachers' readiness to integrate the ICT simulation courseware and help to promote professional skills required in accounting discipline. The TPCKS framework explains that the interaction between the knowledge set and skills (skills in maintaining full sets of accounts under computerized platform) allows for an emergent of teachers' creativity.

1.3 Teachers' Professional Developments

Teachers' professional development involves working collaboratively, addressing contextualised authentic problems and negotiating meaning through practices [9]. Teachers' quality are increasingly linked to ongoing learning and enhanced by being practitioner researchers as a key group in the reforming of classroom practice for more effective student learning.

1.4 The Program Evaluation – Context, Input, Process, and Product (CIPP) Approach

CIPP program evaluation model [10] made up of four phases of activities: context, input, process and product, by which the evaluation assists a decision-maker to answer four basic questions: (i) What should we do? (ii) How should we do it? (iii) Are we doing it as planned? (iv) Did the program work? By comparing the actual outcomes to the anticipated outcomes, better decision can be established.

2. Research Questions

(i) What are the demographic factors that can influence accounting teachers to use ICT in the classroom teaching Principles of Accounting?
(ii) What are the additional skills sets required of accounting teachers' to implement new innovations using the computerized strategic instructional module in classroom?
(iii) What are the perceptions of accounting teachers' on the usage of accounting educational simulation courseware, ASSETBase in classroom teaching and learning?
(iv) What is the level of teachers' ICT usage as a pedagogical tool in accounting education as highlighted by the accounting education standard?
(v) What is the effect of the training of strategic training module of ICT integration in classroom teaching and learning process to be under taken on the teachers' professional development?

3. Contribution

The findings of this study can assist MoE to chart future plans that can propel the accounting teachers' professional development. It significantly contributes to the MoE national agenda to monitor the performance of ICT implementation in education system. By maximizing the usage of ICT in teaching and learning of Principles of Accounting, both teachers and students will experience the high standards of accounting procedures setup by the

international accounting professional bodies such as LCCI, ACCA and CIMA. Simultaneously, the needs of business and industry will be addressed.

4. Methodology

CIPP evaluation model approach is used to evaluate the educational training program conducted for the accounting teachers. Basically, the CIPP model requires that a series of questions be asked about the four different elements of the model: context, input, process and product. The effect of the undergone training on teachers' professional development will exhibits the effectiveness of the strategic training module of ICT integration in classroom teaching and learning process. Descriptive research will undertake to establish the empirical relationships of variables between the dependent variables: teachers' professional development (teachers' cognitive level, skills competency, attitude to change and desire) and the independent variables: success factor (teachers' demographic factors, teachers' additional skills set, teachers' perception on ICT and accounting educational courseware usage, technological situation/environment) within the conceptual framework.

5. Preliminary Results

A pilot study was conducted in 150 technical and national secondary schools nationwide in Malaysia. The preliminary result shows teacher-respondents have positive perceptions towards the integration of ICT using ASSETBase simulation courseware, given the mean score of teachers' readiness level is high. Further, most of the teacher-respondents understand the purpose of integrating ICT and the used of the courseware in teaching and learning and are serious in implementing new approach.

References

[1] Ministry of Education (2010). Principles of Accounting syllabus. Kuala Lumpur: Curriculum Development Division, Ministry of Education, Malaysia.

[2] Salleh, A., Minai, B., & Abu Kassim, N.A. (2007). Are accounting teachers receptive towards integration of technology in accounting education? The Malaysian Accountants - Journal of The Malaysian Institute of Certified Public Accountants (MICPA), April, 4, 9-15.

[3] Plomp, T., Ten Brummelhuis, A. C. A., & Rapmund, R. (1996). Teaching and learning for the future. Enschede: Secretariat COMMITT. University of Twente.

[4] Sutherland, R. (2004). It's about interactive learning and interactive education: Teaching and learning in the information age. United Kingdom: University of Bristol.

[5] IFAC (2007). IFAC issues guidelines for ethics, IT in accounting programs. IFAC's International Accounting Education Standards Board.

[6] International Accounting Education Standards Board (IAESB) (2007). IEPS 2 Information Technology for Professional Accountants. IFAC.

[7] Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A framework for teacher knowledge. Ann Arbour: Michigan State University.

[8] Willis, J.W., Thompson, A., and Sadera, W. (1999). Research on technology and teacher education: Current status and future directions. Springer Boston, 47(4).

[9] Barab & Duffy (2000). Designing virtual communities in the service of learning. Cambridge UniversityPress.

[10] Stake, R. (1983). Program evaluation, particularly responsive evaluation. In G. Madaus, M.Scriven, and D. Stufflebeam (Eds.), Evaluation models. Boston: Kluwer-Nijhoff.