ΕΤΠΕ

ΕΛΛΗΝΙΚΗ ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΝΩΣΗ
ΤΕΧΝΟΛΟΓΙΩΝ ΠΛΗΡΟΦΟΡΙΑΣ
& ΕΠΙΚΟΙΝΩΝΙΩΝ ΣΤΗΝ ΕΚΠΑΙΔΕΥΣΗ

6ο Συνέδριο ΕΤΠΕ
«Οι ΤΠΕ στην Εκπαίδευση»

Λεμεσός

25 - 28 Σεπτεμβρίου 2008

ISSN: 2529-0916.

Viability of Web-Based Professional Development Training in a Centralized Educational System

Nikleia Eteokleous-Grigoriou

Viability of Web-Based Professional Development Training in a Centralized Educational System

Nikleia Eteokleous-Grigoriou
Frederick University Cyprus
n.eteokleous@fit.ac.cy

ABSTRACT

This exploratory study consists of an in-depth examination of the viability and acceptability of web-based learning as an instructional method for in-service teacher professional development training in a centralized educational system. The study explores whether web-based training can address the problems encountered related to teacher professional development training on computer integration and contribute to the successful integration of computer technology in classroom practices. The study applies a phenomenological approach, making use of qualitative data collected through in-depth interviews gathered from a pull of eighteen in-service elementary teachers. The study examines teachers' experiences, and opinions towards the application of web-based professional development training, as well as the factors that influence the application of web-based professional development training. Given that the results of this study reveal that web-based training is viable and acceptable; requirements for successful development and implementation are determined.

KEYWORDS: *Web-based professional development training, Elementary teachers, Centralized system*

WEB-BASED COURSES AND NON-TRADITIONAL LEARNERS

The use of computer technology has deeply affected education. With the rapid diffusion of the Internet, computers, and telecommunications, new approaches to learning were created including online course delivery (Crosta, 2004). As a result, the interest in the development and use of distance learning in education has been steadily increasing (Dabbagh & Kitsantas, 2004) providing "anytime, anywhere learning" (Berge, 1999; Gilbert & Moore, 1998; Tianguang & Lehman, 2003). Hodgson (2002) mentions that open and distance learning is no longer working only with students located somewhere other than a university or college campus, but is convenient and suited to the needs of adults or non-traditional learners who are often constrained by their work, family and household commitments (U.S. Copyright Office, 1999). As Bickle and Caroll (2003) state, online courses offers the opportunity to working students or other professionals that are unable to attend in-classroom instruction, to continue their education, to meet their personal needs and educational interests, and advance their careers. Numerous researchers suggest that on-line instruction is successful reporting high satisfaction rates (Navarro &

Shoemaker, 2000) and increased student level of motivation and performance results (Rosenkrans, 2000). Finally, due to people's busy life styles online courses provide a pervasive new channel for education that makes it more accessible and appealing to learners (Owston, 1997; Shanley et al. 2004; Tianguang & Lehman, 2003).

ASSESSING ICT INTEGRATION IN EDUCATION

More than a few studies covering different parts of the globe examined and evaluated ICT integration in numerous different educational settings (Angeli & Valanides 2005; Earle 2002; Honey 2001), suggesting that elementary teachers do not integrate ICT in their classroom practices. The above happens due to a number of factors such as: lack of resources, inadequate professional development training, lack of guidance, support and incentives from the officials, teacher computer skills and attitudes towards computer technology, etc (Carvin, 1999; Earle, 2002; Ertmer, 1999; Eteokleous, 2007; Hadjithoma & Eteokleous, 2007; Honey, 2001; McKenzie, 2001).

One of those factors is the inadequate professional development training in developing skills to integrate computer as a tool in the teaching and learning process. Successful computer technology integration into classrooms requires the continuous and adequate professional development and training of teachers (Carvin, 1999; Demetriadis et al.,2003; Mullen, 2001; Peck et al., 2003). Studies suggest that more important than simply learning how to use computers, is professional development in computer curriculum-integration. Finally, many researchers (Brush et al., 2003; Carvin, 1999; Earle, 2002; Honey, 2001; McKenzie, 2001; Thompson et al., 2003; Wilson, 2003) suggest that teachers who had received both kinds of training (basic computer skills and technology integration) are likely to feel more prepared and comfortable to integrate computers in their classroom practices.

ICT POLICY IN CYPRUS

The Cypriot Ministry of Education (MOEC) follows a centralized and homogeneous approach to managing schools. Curriculum driven practice, content/textbook -oriented activities, educators' evaluation through the inspectorate system, lack of time, pressure to cover the curriculum, bureaucratic procedures are some of the characteristics of educators' work (Hadjithoma & Eteokleous, 2007). The launch of an ICT policy by the MOEC took place in the early 1990s. Some primary schools were equipped with computers at an experimental level, a Departmental IT group was created, while the governmental Pedagogical Institute (P.I.) started offering at the end of the 1990s an optional training program for teachers (Eteokleous, 2007). 'Evagoras' was the first formal ICT policy document, and describes the action plan for the embedding of new technologies in primary education from 2000 to 2005 (District Curriculum Developers and Evagoras team, 1999). Since 2006 we have entered the second phase of "Evagoras".

The *Problem*

The implementation of 'Evagoras' was partial and some of its goals were post-poned. As many teachers around the globe, Cypriot teachers use computers rather extensively for their own purposes, although they use them less frequently in their classes. When teachers do use computers in classrooms, it tends to be rather restricted, in sporadic fashion, more like high tech chalkboards or as supporting tools. Few teachers were found to use computers as educational tools integrated in the teaching and learning process. Inadequate professional development training of Cypriot in-service teachers seems to be an important contributor to the above described situation (Angeli & Valanides, 2005; Eteokleous, 2007; Hadjithoma & Eteokleous, 2007).

MAIN PURPOSE AND RESEARCH OBJECTIVES

The overall purpose of this study is to get insights concerning the acceptability of web-based learning as an instructional method for in-service teacher professional development training in a centralized educational system. More specifically, the study consists of an in-depth examination of whether web-based training can address the problems encountered related to teacher professional development training on computer integration and contribute to the successful integration of computer technology in classroom practices. To this end, the study aims to address the following:

1. To identify the reasons for inadequate professional development training,
2. To examine teachers' experiences, and opinions towards the application of web-based professional development training,
3. To identify any factors that might influence the application of web-based professional development training.

RESEARCH METHODOLOGY

The current research work applied a phenomenological approach, making use of qualitative data. Phenomenological research was used to understand the beliefs, and behaviors of people and the meaning they make out of their beliefs, and behaviors (Creswell, 2003). This approach seemed ideal to underpin this research study, since it is concerned with understanding human beliefs from the participant's own frame of reference. It assisted in the construction of semi-structured, open-ended questions that encouraged the participants to use their own terminology to describe their experiences and perceptions on the subject under investigation (Ritchie & Lewis, 2003). The interview template was prepared in July 2006 and face-to-face interviews were carried out in September – October 2006. Each interview was completed within one hour. The research population consists of in-service elementary teachers that have computers in their classrooms since 'Evagoras' project launched. Purposive sampling was used in an attempt to select in-service teachers that participated to the professional development training organized by the MOEC and P.I., from different work locations (urban Vs rural schools) and with different computer literacy level (high Vs low). To measure teachers' computer literacy level

the *Loyd/Gressard Computer Attitude Scale questionnaire* was carried out (Loyd & Gressard, 1984, 1985).

RESEARCH OUTCOMES

Demographics

The research sample consisted of 18 elementary in-service teachers. The majority of the teachers were females (72%), were between the age of 31-40 (67%), taught in urban schools (60%), and finally taught in fourth grade (36%). Almost half of the elementary teachers were married (25%) and married with chil-dren (22%). The average class size appeared to be 16-20 students. Regarding teachers' education all of the teachers held a bachelor degree in Primary Education, and 60% percent held master's degrees in various fields. Four of the interviewees (2 men and 2 women) had prior experience with distance learning during conduct-ing their master's degree. Finally, 11 teachers categorized as high and 7 teachers as low computer literate.

Inadequate Professional Development Training

Reasons for inadequate professional development training vary. Firstly, small number of instructors was available for the seminars. As a result, teachers could not receive adequate and continuous help, guidance, and support. Another reason was the lack of resources, including hardware and software. Consequently, very few seminars were planned that they could not address the demand of the educators that were interested in attending. Also, many educators could not attend the seminars due to time and place constraints. Too many educators were not in position to trav-el to the place where the seminars took place due to geographical constraints - the seminars took place at the Pedagogical Institute located at the capital of the island. Along the same lines, lack of time due to family, household, and work constraints inhibited teachers from attending the seminars. Moreover, seminars were not planned towards teachers' needs. For example the training was not related to the materials distributed to schools for ICT integration. The above led to lack of teacher motivation to attend the seminars. Finally, the high cost of the seminars generated more problems as well. Besides the expenses of the resources needed and instructors' salary; monetary rewards was given to the teachers attending the seminars.

Teachers' experiences and opinions towards web-based training

No differences revealed between teachers from rural Vs urban areas, although different opinions were expressed between high and low computer literacy teach-ers and teachers that had prior experience in relation to web-based training.

"Using web-based technology to train in-service teachers on computer tech-nology integration? This is a perfect idea and a very interesting concept to be applied". Web-based training "widens the educational opportunities for educators". "This must be a very good idea for self-motivated, disciplined educators who are absolutely committed…". The above are representative comments from 8 teachers which expressed enthusiasm regarding web-based training. As expected teachers

that previously experienced web-based learning and were classified as high com-
puter literate expressed more positive reactions and reported that they would con-
sider attending web-based training. The teachers that did not previously experience
web-based learning and were classified as low computer literate; accepted the idea
of web-based training in a more conservative way.

Interestingly enough, even the three teachers that mentioned they would not
consider using this form of training, reported it as a good idea to be applied and
that it widens educational opportunities. "I would not use it, no matter what since
I am not self motivated enough" or because "…face to face, daily interaction is
valuable"; explained their personal rejections towards the idea. One of them firm-
ly expressed her negativity towards the idea, reporting that she would never con-
sider attending web-based training since "socialisation is violated through on-line
courses".

Influencing Factors

A general uniformity across the interviewees was apparent in terms of the fac-
tors that that might influence web-based professional development training or in
other words the circumstances that must exist in order to use it. Those factors clas-
sified in the following two categories: personal and lesson-related factors. The per-
sonal related factors can be summarized as follows. Teachers reported that self-dis-
cipline, personal commitment and their computer literacy level are fundamentals
for their decision in attending web-based training. Additionally, flexibility in terms
of space and time, (better management of time, i.e. spending more time with fam-
ily and friends), are two other factors that positively influence teachers in attend-
ing web-based training.

The second category of factors, named as lesson-related factors, includes first
of all the nature of the course offered that should be such that physical interaction
is not absolutely essential despite the existence of web-tools that help interaction.
Secondly, teachers reported that the course needs to have the appropriate platform
and tools to support sufficient degree of contact with the instructor and classmates.
The interviewees identified the importance of personal contact and direct commu-
nication with the instructor. A flexible web platform must exist to incorporate web
tools needed such as video teleconferencing, discussion forums, and problem solv-
ing boards.

The aforementioned factors can be also viewed as the prerequisites for web-
based professional training success. Through an e-learning platform, teachers
would like to have continuous support, guidance and help as well as the employ-
ment of a more personalized training, developed on the needs of each educator.

CONCLUSION

Research results revealed that web-based professional development training is
possible to be applied. Web-based training reveals to be viable and acceptable given
that teachers' reactions were mostly positive. It can be used to develop teacher

computer skills as well as skills on integrating computer as a tool in the teaching and learning process. Teachers recommended that combination of online teaching and physical meetings for learning and problem solving should be provided. It can be also said that success of this attempt lies in identifying and addressing teachers' concerns and needs related to computer technology integration in classrooms. Since this is an exploratory study, the concept will be further tested through an experimental study examining teachers' experiences in a web-based professional development training environment. Finally, the positive results of the study become even more valuable in Cyprus context since web-based learning is a newly established concept in Cyprus educational system and society. Other reasons that contribute to the above are: higher educational institutions in Cyprus do not offer online courses but they collaborate with universities from abroad to achieve the above, the first higher educational institution in Cyprus that offers mainly on-line courses started its operation in September 2006, and last but not least a few years ago online courses were not even accredited by Cyprus-based accreditation bodies assigned by the government.

REFERENCES

Angeli, C., and Valanides, N. (2005). 'A socio-technical analysis of the factors affecting the integration of ICT in primary and secondary education'. *In Literacy in technology at the K-12 level: Issues and challenges.* (ed. L. T. W. Hin and R. Subramaniam). Heshey, PA: Idea Group, Inc. Education, Education Media International, Routledge, pp. 123-131.

Berge, Z. (1999). Interaction in post-secondary web-based learning. *Educational Technology*, January-February, 5-11.

Bickle, M. C., & Carroll. J.C. (2003). *Checklist for quality online instruction: outcomes for learners, the professor and the institution*. College Student Journal, 37 (2), 208-219.

Brush, T., Glazewski, K., Rutowski, K., Berg, K., Stromfors, C., Van-Nest, M. H., Stock, L., & & Sutton, J. (2003). 'Integrating technology in a field-based teacher training program: the PT3@ASU Project'. *Educational Technology Research and Development*, *51*(1), 57–72.

Carvin, A. (1999, September 30). Technology Professional Development for Teachers: Overcoming a Pedagogical Digital Divide. *The Digital Beat,* 16(1). Retrieved January 31, 2003, from http://www.benton.org/DigitalBeat/db093099.html

Cresswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd ed. Sage Publications: CA.

Crosta,. L. (2004). Beyond the use of new technologies in adult distance courses: an ethical approach. *International Journal on E-Learning*, 3(1), 48-61.

Dabbagh, N. & Kitsantas, A. (2004). Supporting self-regulation in student-centered web-based learning environments. *International Journal on E-Learning.* 3 (1), 40-48.

Demetriadis, S., Barbas, A., Molohides, A., Palaigeorgiou, G., Psillos, D., Vlaha-
vas, I., Tsoukalas, I., & Pombortsis, A. (2003). 'Culture in negotiation'':
teachers' acceptance / resistance attitudes considering the infusion of tech-
nology into schools'. *Computers & Education*, 41, 19-37.

District Curriculum Developers and Evagoras team. (1999). *Evagoras: Computer
Technology in Elementary Education.* Cyprus Ministry of Education and
Culture, Department of Elementary Education, Nicosia.

Earle, R.S. (2002, January-February). The Integration of Instructional Technology:
Promises and Challenges. *ET Magazine, 42*(1), 5-13. Retrieved January 22,
2003, from http://BooksToRead.com/etp

Ertmer, P. (1999). Addressing first- and second-order barriers to change. Strategies
for technology implementation. *Educational Technology Research and
Development, 47* (4), 47-61.

Eteokleous, N. (2007). Evaluating Computer Technology Integration in a
Centralized Educational System. *Computers and Education Journal.*
Available online 10 September 2007, doi:10.1016/j.compedu.2007.07.004

Gilbert, L., & Moore, D. (1998). Building interactivity into web course: Tools
for social and instructional interaction. *Educational Technology,* May-June,
29-35.

Hadjithoma, C., & Eteokleous, N. (2007). ICT in Primary Schools: Explaining the
Integration in Relation to the Context. *Mediterranean Journal of
Educational Studies*, 12 (1), 1-25

Hodgson, V.E. (2002). The European Union and e-learning: an examination of
rhetoric, theory, and practice. *Journal of Computing Assisted Learning,* 18,
240-252.

Honey, M. (2001, July 25). Testimony and Statement for the Record of Margaret
Honey. *Educational Development Center, Inc.* Retrieved January 31, 2003,
from: http://www.edc.org/spotlight/Tech/mhtestimony.htm

Loyd, B.H. & Gressard, C.P. (1984). Reliability and factorial validity of computer
attitude scale. *Educational and Psychological Measurement,* 44(2), 501-505.

Loyd, B.H. & Loyd, D.E. (1985) The reliability and validity of an instrument for
the assessment of computer attitudes. *Educational and Psychological
Measurement,* 45(4), 903-908

McKenzie, J. (2001). Head of the class. How teachers learn technology best.
Electronic School. Retrieved January 30, 2003, from http://www.electronic-
school.com/2001/01/0101f2.html

Mullen, L. (2001). 'Beyond infusion: preservice students understandings about
educational technologies for teaching'. *Journal of Technology and Teacher
Education, 9*(3), 447-466.

Navarro, P., & Shoemaker, J. (2000). Performance and perceptions of distance
learners in cyberspace. *The American Journal of Distance Education*,14(2),
15-35.

Owston, R.D. (1997). The world wide web: A technology to enhancing teaching and learning? *Educational Researcher*, 26(2), 27-33.

Peck, K. L., Augustine, C., & Popp, D. (2003). 'The AECT Project: modeling the effective use of technology in teacher education'. *TechTrends*, *47*(2), 21-23.

Ritchie, J. & Lewis, J. (2003). *Qualtitative Research Practice. A Guide for Social Science Students and Researchers.* Thousand Oaks, CA: Sage.

Rosenkrans, G.L. (2000). Assessment of the Adult Student's Progress in an On-line Environement. *The Internet and Higher Education*, 2(2-3), 145-160

Shanley, L., & Thompson, A. C. (2004). Distance education is as effective as traditional education when teaching food safety. *Food Service Technology,* 4, 1-8.

Tianguang Gao & James D. Lehman, (2003). The effects of different levels of interaction on the achievement and motivational perceptions of college students in a web-based learning environment. *Journal of Interactive Learning Research*, 14 (4), 367-387.

Thompson, A. D., Schmidt, D. A., & Davis, N. E. (2003). 'Technology collaboratives for simultaneous renewal in teacher education'. *Educational Technology Research and Development*, *51*(1), 124-128.

U.S. Copyright Office. (1999). Policy makers: New media, distance learning copyright issues. Washington, DC: The Library of Congress. Retrieved July, 2004 from: http://www.distance-educator.com/portals/policy_copyright.html

Wilson, E. K. (2003). 'Preservice secondary social studies teachers and technology integration: what do they think and do in their field experiences'. *Journal of Computing in Teacher Education*, *20*(1), 29-39.