Chapter 14

A Study on Technological Pedagogical Content Knowledge Experiences of Primary School Teachers Throughout Blended Professional Development Programs

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ABSTRACT

The purpose of the chapter is to examine the effectiveness of a blended teacher professional development program focused TPACK on the TPACK development of primary school teachers. The study describes a blended teacher professional development program in which primary school teachers developed their TPACK. An embedded experimental mixed method design was employed. A total of 12 events were organized including six face-to-face seminars and six online seminars which were performed by field experts within the program. A Facebook group was created to promote sharing and to increase communication and interaction among the participants. Quantitative results indicated that all participants developed their perceived TPACK knowledge and skills with respect to their subject matter and pedagogical approaches. Qualitative results indicated that the participants reflected knowledge, skills, and actions that met the indicators related to TPACK development. The study has significant implications for the understanding of how design and conduct effective blended program.

DOI: 10.4018/978-1-5225-7001-1.ch014
INTRODUCTION

The professional development of teachers is a key aspect of educational change processes and school development. It is necessary to help teachers develop their instructional practices in the content areas, innovative use of new tools and strategies and knowledge of standards-based assessment (Lawless & Pellegrino, 2007) and to complete the successful school development process (Day, 1999). Thus, the role of teachers in the process of educational change and the quality of professional development processes are important for educational institutions. In the twenty-first century, it is expected that teachers should continue their professional development in the face of changing and developing opportunities and enhance their understanding of technology integration in education. It is not enough for teachers to acquire technology use skills alone. In this regard, Technological Pedagogical Content Knowledge (TPACK) is an emerging conceptual framework as a way of explaining the complexity of technology integration and offers an effective way of thinking about effective technology integration (Polly & Brantley-Dias, 2009).

BACKGROUND

This section provides an overview and focuses on related topics to give an insight about this chapter. The section begins with the integration of technology in education, continues to the TPACK framework and, finally, discusses the professional development of teachers.

Technology Integration in Education

Despite the lack of a common definition, technology integration can be defined as the effective implementation of educational technology to accomplish intended learning outcomes in education (Davies & West, 2014). Technology integration into teaching and learning has a multidimensional and dynamic process. Bishop and Spector (2014, p. 817) stated that an important indicator of successful technology integration is that “the focus—in the classroom or with the learner—is no longer on the technology itself, but rather on the task at hand.” Employing only technology in a classroom does not mean successful technology integration and teachers should not be ignored in the process of technology integration (So & Kim, 2009). In this context, it is emphasized that teachers should have sufficient knowledge of how to integrate technology into the classroom effectively (Hew & Brush, 2007). Preparing teachers for technology integration plays an important role in all educational development plans and reform initiatives (Bos, 2011). Factors affecting technology integration into the classroom should be well understood in order to support teachers in using technology pedagogically (Shin, Koehler, Mishra, Schmidt, Baran, & Thompson, 2009). Thus, professional development is critical to ensuring that teachers keep up with changes and develop new understanding methods of effective practice (Lawless & Pellegrino, 2007). Previous studies have reported that there are many barriers to the successful technology integration into the classroom due to various factors (Bingimlas, 2009; Ertmer, Ottenbreit-Leftwich, Sadik, Şendurur, & Şendurur, 2012). Teachers who play critical roles in the adoption of technology into school are at the center of barriers to successful technology integration in terms of inadequate knowledge and skills (Ertmer, Ottenbreit-Leftwich, Sadik, Şendurur, & Şendurur, 2012; Hew & Brush, 2007; Hsu, 2010). To that end, teachers’ understanding and skills of technology integration need to be improved in order