Chapter 69
Parochial School Teachers Instructional Use of the Interactive Whiteboard

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ABSTRACT

This chapter presents findings from a study that utilized Davis' (1989) Technology Acceptance Model (TAM) to investigate K-8 teachers' instructional usage of the interactive whiteboard (IWB). Through surveying 145 teachers and 40 administrators of the Lutheran Church Missouri Synod schools, the researcher used multiple regression and moderator analyses to examine whether the TAM model helped explain teachers' reported teacher-centered and student-centered instructional IWB use. The results of the study indicated two variables adapted from the TAM, teachers' perceived usefulness (PU) and perceived ease of use (PEOU) of the IWB, contributed to the prediction of teacher-centered instructional usage, and PU contributed to the prediction of student-centered instructional usage. Moderator analysis indicated the variable for teachers' technological pedagogical content knowledge of the IWB moderated the relationships between PEOU of the IWB and each teacher and student-centered instructional usage, as well as between PU of the IWB and teacher-centered instructional usage.

INTRODUCTION

Our society is evolving at rapid pace, challenging individuals and organizations to incorporate new technological tools into existing practice. Over the past decade, the interactive whiteboard (IWB) is a tool that has proven to be is valuable in teaching and learning (de Koster, Volman, & Kuiper, 2013). The body of literature on classroom IWB use suggests that the tool has the potential to foster positive learning outcomes in contexts from early childhood to the secondary level (Winzenried, Dalgarno, & Tinkler, 2010). According to Lee (2010), the IWB has had a powerful impact on transforming teaching from a traditional paper-based format to a digital mode.

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However, research suggests that teachers do not necessarily utilize the technology that is available to them for instruction as they do for other purposes (Dorsen, Gibbs, Guerrero, & McDevitt, 2004). Specifically, Dorsen et al. (2004) wrote:

Schools may have all of the latest technological resources and systems in place so that students and faculty might have convenient access to this technology. The crucial factor in the digital divide equation is whether these tools are being used and how effectively they are being used in instructional settings. (p. 305)

If teacher utilization of available instructional technology tools is essential to closing this digital divide, naturally the question as to what motivates teachers to use instructional technology arises.

This chapter reports on a study that investigated a unique subset of teachers in the United States teaching in parochial schools within the Lutheran Church Missouri Synod. Specifically, the study that examined teachers' reported instructional usage of a popular form of instructional technology, the interactive whiteboard (IWB), and teacher reported variables identified in the research literature as factors influencing teachers' technology use. Understanding the extent to which teachers in this distinct parochial school setting adopted the IWB can help school leaders gain insight into how teachers adapt to a technologically advancing classroom.

Background

This study examined instructional interactive whiteboard use of a distinct group of kindergarten through 8th grade teachers working in The Lutheran Church Missouri Synod (LCMS) schools. For the purpose of brevity, such teachers will be referred to as K-8 teachers. The LCMS schools are the largest group of Protestant schools in the world (Pekari, 2011). There were 2,343 LCMS schools in the United States during the 2011-2012 school year, including 1,376 early childhood centers, 879 elementary schools, and 88 high schools, altogether which enrolled a total of 229,571 students (Cochran, 2012). That year, the racial background of students enrolled in U.S. LCMS schools was 82% White, 7% Black, 5% Hispanic, 3% Asian, and 3% other. The religious affiliation of enrolled students was reported to be 34% LCMS, 3% other Lutheran, 36% non-Lutheran, and 17% unchurched (Cochran, 2012). Schools serving kindergarten through 8th grade students within the LCMS system are referred to as elementary schools (Cochran, 2012). A national survey of LCMS schools during the 2011-2012 school year found that the average elementary school enrolled 110 students, employed 8 teachers, and had a student to full time teacher ratio of 14:1 (Cochran, 2012).

Lutheran school teachers vary in their religious affiliation and may be designated as rostered LCMS, which refers to teachers who were synodically trained in a LCMS teacher education program, or non-rostered, which refers to teachers who were not synodically trained. During the 2011-2012 school year 6,000 LCMS teachers were synodically trained LCMS rostered teachers. The religious affiliation of the remainder of the teachers was 5,500 non-rostered LCMS, 3,800 non-rostered non-LCMS, and 2,700 non-rostered from an unidentified affiliation (Cochran, 2012).

Many Lutheran schools educate students on a lower budget than public schools. The average per pupil expenditure at LCMS elementary schools in the U.S. for the 2011-2012 school year was $6,325 (Cochran, 2012). Salaries for teachers with a bachelor's degree averaged $33,132 in the 2011-2012 school year and $38,672 for a master's degree (Cochran, 2012). Sources of funding included congregation budget (20%),