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Overcoming Pedagogical, Social/Cultural, and Attitudinal Barriers to Technology Integration in K-5 Schools

Lisa Durff, PhD

Abstract

In this qualitative multiple case study, I interviewed educators to determine how they overcame barriers to technology integration. The findings showed that a triadic force of personal, behavioral, and environmental factors work together to influence technology integration. The present study may contribute to social change by increasing the knowledge of barriers preventing integration of technology into the elementary classroom.

Problem

• This study looked at the problem of integrating technology into K-12 classrooms located in the rural northeast United States. Although first-order barriers have been removed in this country, second-order barriers still obstruct integration into classroom instruction. Because technology increases academic achievement for K-5 students, more teachers are called upon to integrate technology into classrooms. These teachers face attitudinal, social/cultural, and pedagogical barriers that obstruct technology integration.

• My study examined three influences that affect technology integration: attitudes, social connections and cultural, and finally pedagogical backgrounds of educators. This study advanced the profession by increasing the knowledge about the barriers end-users perceive. The results of this study are particularly useful to administrators looking for ways to have teachers in their schools overcome barriers to technology integration, as well as to educators seeking to overcome barriers on their own.

Purpose

The purpose of this qualitative multiple case study was to analyze the attitudes and behaviors of three groups to determine how some teachers successfully overcame barriers to technology integration to improve student learning.

Relevant Literature

Conceptual Framework

Social cognitive theory of Bandura (1986) and groundwork by Ertmer (1999) on **barriers to technology integration**.

- Bandura's theory can be visualized as a triangular model with personal, behavioral, environmental factors interacting to determine a person's actions.
- The barriers to technology integration perceived by educators are influenced by these same factors Bandura delineated in his social cognitive theory.

Relevant Literature

This study contributed to filling the gap in knowledge about perceived barriers to technology integration for rural teachers. Most teachers have not yet overcome barriers which include attitudinal barriers, social/cultural barriers, and pedagogical preferences. Teo (2009) discovered self-efficacy attitudes affected technology integration in his study of 1094 pre-service teachers. Aldunate and Nussbaum (2013) observed in their study of pre-service teachers social surroundings and cultural landscapes influence classroom use of technology as noted by Ertmer and Ottenbreit-Leftwich (2010). Static school culture and peer pressure from surrounding teachers, traditional administrators, and the social context influence individual teachers to integrate or not. Liu's study of educators (2011) confirmed that even teachers who have student-centered classrooms use teacher-centric activities when integrating technology. My findings point to specific strategies administrators can implement to lower these 2nd order barriers.

Research Questions

How do K-5 teachers overcome barriers to technology integration in one rural Northeastern district?

1. How do K-5 teachers overcome attitudinal barriers to technology integration in one rural Northeastern district?
2. How do K-5 teachers overcome social/cultural barriers to technology integration in one rural Northeastern district?
3. How do K-5 teachers overcome pedagogical barriers to technology integration in one rural Northeastern school district?

Procedures

The research design was a qualitative multiple **case study**. **Purposive sampling** was used to identify participants. The **sample** included **14** educators in the northeast, 4 males and 10 females. I conducted interviews with these educators, had interviews transcribed, and sent transcriptions to participants for member checking. The results revealed the attitudinal barriers, social/cultural barriers, and pedagogical barriers that interact to determine how teachers overcome barriers to integrating technology into their classrooms.

Data Analysis

Methodology: Qualitative Multiple Case Study

Data Collection: Interviews with 14 educators in the rural northeast

Data Analysis: Open coding identified themes and patterns.

Using the multiple case study approach, I gathered data from interviews with educators in 3 schools and looked for contextual clues in that data to answer the research questions. Data were analyzed using open coding to identify rich themes and patterns.

Findings

The findings revealed that teachers who overcame barriers to technology integration did so in three areas. They overcame attitudinal barriers, social/cultural barriers, and pedagogical barriers. During the interviews the following themes emerged for

- **Research Question 1:** *Adaptability, Evolution of Tech Skills, Peer Support, and Professional Training.*
- **Research Question 2:** *Required Software, Status Quo, and Unvalued.*
- **Research Question 3:** *Continual Change, Appropriate Resources, and Preparing Students.*

Limitations

A limitation of the study may be that participants taught in the rural northeastern area of the United States. Studies conducted in other countries reveal 1st order barriers impede technology integration while 2nd order barriers impede technology integration in this country.

Different patterns, categories, and themes may have emerged in the data had the sample population been drawn for urban districts, districts in different geographical locations, or from international locations.

Conclusions

The results of this study are most applicable to: **Administrators** who wish to support teachers in successfully overcoming barriers to technology integration support by

- scheduling professional development focused on the use of technology in-house;
- enabling teachers to attend conferences outside of the school building;
- providing asynchronous online trainings;
- encouraging collegial sharing;
- offering technology support to teachers; and
- avoiding the stigma of requiring specific software or hardware use.

Teachers who overcome barriers to technology integration benefit from

- improved efficiency in differentiating instruction;
- communicating with parents; and
- organizing student groups.

Those who talked with peers, shared ideas, and supported each other could overcome barriers to technology integration on their own.

Social Change Implications

By increasing the knowledge of how to overcome barriers preventing integration of technology into the K-5 classroom, strategies to lower these barriers may be designed so teachers increase the use of technology for student learning, motivation, and engagement.

Chair: Dr. Maryfriend Carter, 2nd Member Dr. Paula Dawidowicz, URR Member Dr. Gary Lacy