

Professional Development for One-to-One Mobile Technology Programs

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Problem

The research problem addressed one of the critical components to measure success of one-to-one mobile technology programs, the effectiveness of professional development provided to teachers. A research gap exists concerning proven and effective principles and practices for technology professional development specific to one-to-one programs and changes in teacher practice and attitude.

Purpose

The purpose of this qualitative in-depth interview study is to (1) Examine systems and structures for proven and effective professional development principles and practices used by technology instructional coaches to facilitate the integration of one-to-one mobile technologies into K-12 student learning experiences, and (2) to explore the perceptions of technology instructional coaches regarding changes in teacher practice and attitudes following professional development training.

Significance

The significance of the study includes practical contributions that provide research data for school districts that are implementing one-to-one mobile technology initiatives.

- The study is important for all stakeholders, including instructional coaches, students, parents, teachers, administrators, and decision makers at the district, board, state, and national level.
- The study may assist policy makers in understanding the importance of funding and implementing proven and effective practices and strategies for technology professional development for teachers to implement sound practices effectively as they integrate one-to-one mobile technology programs.

Social Change Implications

(1) Teacher retention and recruitment; (2) Help close the digital equity gap for students; (3) No longer limited to only resources in classroom walls – window to the world!; and (4) Build teacher leadership capacity.

Theory or Framework

(1) The pedagogical framework of **TPACK** from Mishra & Koehler (2006), built on Shulman's (1986) pedagogical content knowledge (PCK) framework provides a lens for studying how teachers effectively use technology, pedagogy, and content knowledge as they integrate one-to-one mobile technologies into student learning. The Sweet spot is in the middle where all 3 come together!

(2) The conceptual framework also includes the Theory of **Andragogy** from Knowles (1984) which includes the 6 core adult learning principles shown here which are significant to the needs of teachers who participate in technology professional development for one-to-one mobile technology programs for creating new knowledge.

Relevant Scholarship

My literature review focused on key concepts in different levels of professional development standards and strategies including: (1) General professional development, (2) Professional development for technology integration, and, (3) Professional development for 1:1 mobile technology. A research gap exists concerning proven and effective principles and practices for technology professional development specific to one-to-one programs and changes in teacher practice and attitude.

Research Questions

Research Question 1: What professional development **principles** do technology instructional coaches use in designing professional development for one-to-one mobile technology programs?

Research Question 2: What professional development **practices** do technology instructional coaches use in designing professional development for one-to-one mobile technology programs?

Research Question 3: What are the perceptions of technology instructional coaches regarding changes in **teacher practice** after professional development sessions?

Research Question 4: What are the perceptions of technology instructional coaches regarding changes in **teacher attitudes** after professional development sessions?

Participants

13 participants: 10 female, 3 male from the United States, India, and Korea were selected using purposive sampling who were technology instructional coaches or similar title who had developed and facilitated technology professional development for one-to-one project.

Procedures

First Round Interviews: (13 participants) keeping in my mind that participant 12 and 13 were interviewed together because they work closely together.

Consisted of Demographic Questions and Open-Ended Questions and Probes
Analysis of 1st round of questions were used to develop 2nd round questions to dig deeper into the experiences of the high-level technology coaches
Second Round Interviews: (7 of the 13 participants from first round of interviews) high-level technology coaches—participants who displayed an extremely high skill level with Open-Ended Questions and Probes

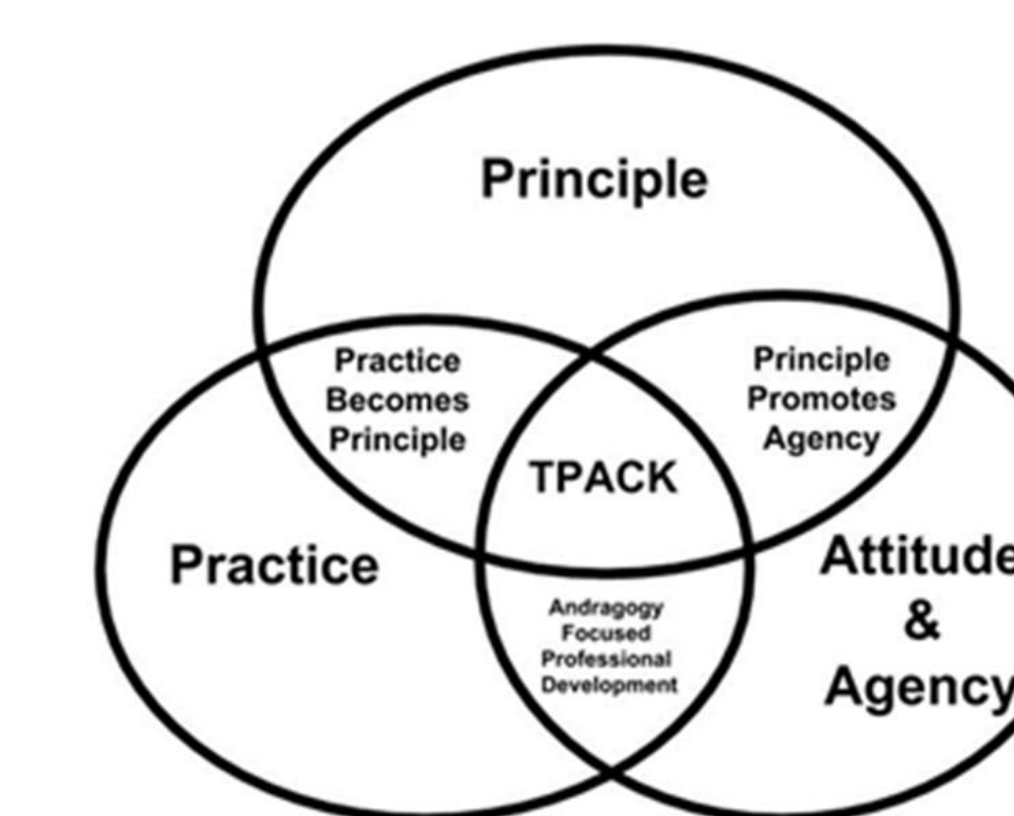
Analysis

The 5 Analytic Phases of Qualitative Data Analysis were used as described by Yin (2016): (1) compiling, (2) disassembling, (3) reassembling and arraying, (4) interpreting and (5) concluding were used to develop a comprehensive description of tech coaches experiences during development and facilitation of 1:1 PD as shared in their interviews. I used NVivo11 Pro with Transcribe Me to produce verbatim transcripts that were saved in Microsoft word files, and then hand coded hundreds of written sticky notes that allowed key information to develop into themes and categories.

Findings

(1) Principles used in designing professional development for one-to-one mobile technology programs promote teacher agency. (2) Andragogy-focused professional development was found to enrich teacher attitudes and agency positively while increasing technology use in their pedagogical practices. (3) And in many cases, practices that were integrated into teaching become principles. All of the integrated themes encircle the TPACK framework as the foundation of professional learning opportunities for K-12 teachers in classrooms with 1:1 technology.

Interpretation



Limitations

(1) # of technology instructional coaches available for interviews due to busy schedules or non responsive to invitation to participate. (2) Time constraint of collecting data within a 3 month time period (3) Interview questions that I created as a first time researcher. (4) Not having other stakeholders included. Interviews with teachers and administrators might have provided clarification about their roles in establishing principles and practices with their one-to-one technology programs. (5) TPACK focuses on the what of technology integration, such as what is being taught and what technology tools are being used and could also focus on the why and how, asking such questions as “why is this effective?” and “how is this impacting learning?”

Recommendations

Recommendations for Further Research: (1) Teacher perceptions; (2) Specific coaching models: Cognitive Coaching and Instructional Coaching, and (3) Limitations and weaknesses of the TPACK framework.
Recommendations for Practice: (1) Encourage administrators to participate in professional learning opportunities. (2) Ensure a site technology instructional coach position is available for daily support of teachers' instructional technology needs. (3) Provide adequate professional learning opportunities and resources for technology instructional coach. (4) Brand a professional learning space by name.

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