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Professional Development for One-to-One Mobile Technology Programs

LeAnn Martin Morris, Ph.D.

Problem

One critical component to the success of one-to-one mobile technology programs is the effectiveness of professional development provided to teachers to use this technology. A research gap exists concerning proven and effective principles and practices and changes that improve teacher practice and attitude.

Purpose

The purposes of this qualitative in-depth interview study were 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 providing:

- Research data for school districts that are implementing one-to-one mobile technology initiatives.
- Information for all stakeholders, including instructional coaches, students, parents, teachers, administrators, and decision makers at the district, board, state, and national level.
- Assistance to 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

Four key implications emerged to promote positive social change:

- Teacher retention and recruitment.
- Help close the digital equity gap for students.
- No longer limited to only resources in classroom walls – window to the world.
- Build teacher leadership capacity.

Theory or Framework

The theoretical frameworks that grounded this study include:

- **TPACK (Technological Pedagogical Content Knowledge)** (Mishra & Koehler, 2006), which was built on Shulman's (1986) pedagogical content knowledge (PCK) framework.
- **The theory of andragogy** (Knowles, 1984) which includes the 6 core adult learning principles that are significant to the needs of teachers.

Relevant Scholarship

The key concepts in different levels of professional development standards and strategies include: (1) General professional development, (2) Professional development for technology integration, and, (3) Professional development for one-to-one mobile technology.

- Teachers must receive meaningful, sustained, job-embedded, and relevant professional development (Storz and Hoffman, 2013; Topper and Lancaster, 2013); Towndrow and Wan, 2012).
- The biggest contributing factor is giving teachers time to engage, explore, and reflect in learning continuously and collaboratively within the school day, along with content-specific professional development (Dawson et al., 2013; Doering et al., 2014; Hechter & Vermette, 2013, 2014).
- Study a program or project longer than the norm of the first 3 years (Sauers & McLeod, 2012).

Research Questions

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

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

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

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

Participants

Using **purposive sampling**, 13 participants were selected (10 female, 3 male from the United States, India, and Korea), who were technology instructional coaches or similar title who had developed and facilitated technology professional development for a 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.
- Consisted of open-ended questions and probes.

Analysis

Hand coding and NVivo 11 Pro were used to manage the data for manipulating, searching, and reporting the coded text to examine relationships in the data, and a matrix was developed to compare critical points in professional development principles and practices and changes in teacher practice and attitudes.

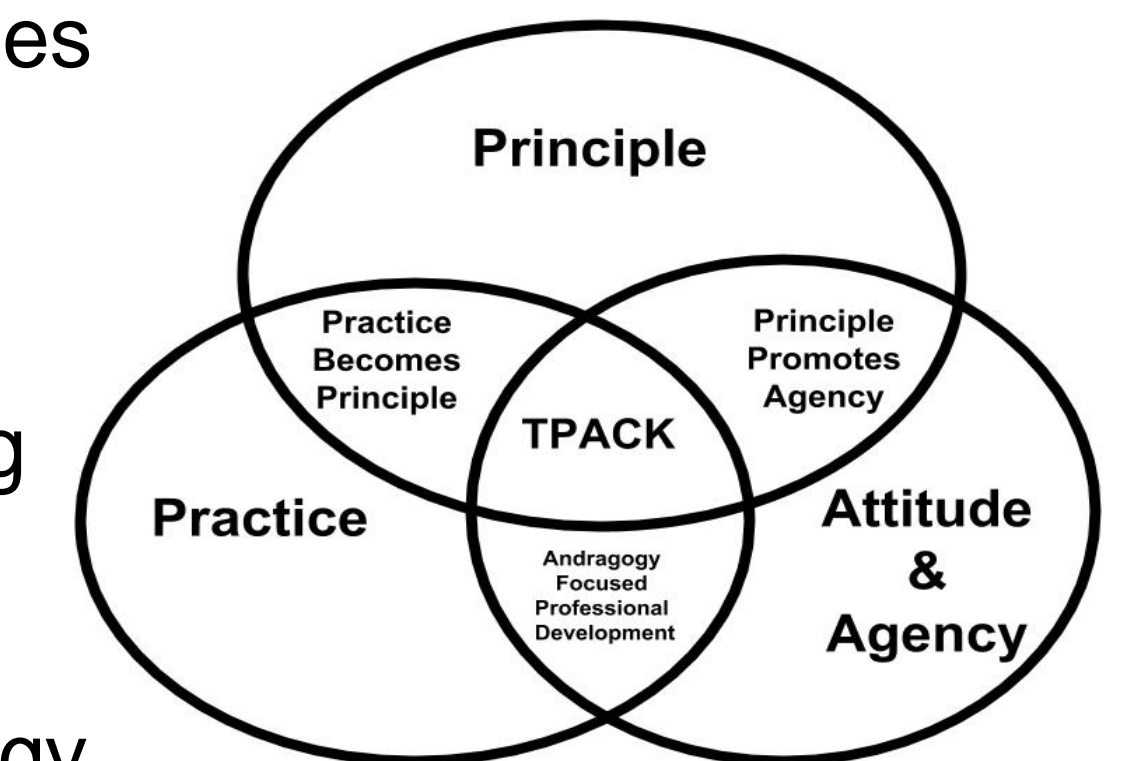
Findings

The findings showed integration of overarching similarities juxtaposing the **three key themes** that emerged from the analysis of the research questions:

- Principles used in designing professional development for one-to-one mobile technology programs promote teacher agency.
- Andragogy-focused professional development was found to enrich teacher attitudes and agency positively while increasing technology use in their pedagogical practices.
- In many cases, practices that were integrated into teaching become principles.

Interpretation

The integrated themes encircle the TPACK framework as the foundation of professional learning opportunities for K-12 teachers with one-to-one technology.



Limitations

Possible limitations include

- Number of available of technology instructional coaches
- Collecting data within a 3 month time period
- Researcher created interview questions
- Not having other stakeholders included, such as teachers and administrators
- TPACK framework

Recommendations

Recommendations for Further Research

- Teacher perceptions of professional development
- Specific coaching models
- Cognitive Coaching and Instructional Coaching
- Limitations and weaknesses of the TPACK framework

Recommendations for Practice

- Encourage administrators to participate in professional learning opportunities.
- Ensure a site technology instructional coach position is available for daily support of teachers' instructional technology needs.
- Provide adequate professional learning opportunities and resources for technology instructional coach.
- Brand a professional learning space by name.

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