Technology Integration Concerns: A Dialogue Between Pre-Service Teachers and Exemplary In-Service Teachers

Summary of Original Proposal

Krista Glazewski, Anne T. Ottenbreit-Leftwich, Sinem Aslan, Bryan Hoey, and Aaron Zachmeier (Instructional Systems Technology, School of Education)

Multiple factors affect pre-service teachers’ attitudes towards using technology in their classrooms, such as self-efficacy and perceived usefulness of the technology. Research has shown that a mentor’s positive attitude toward technology use may positively affect attitudes of pre-service teachers towards the use of technology. To better understand the impact of a mentor’s attitude on the attitude of the mentee, these researchers will survey pre-service teachers to elicit their concerns regarding technology integration in their future classrooms. In the second stage of data collection exemplary teachers who use technology in their classrooms will be presented with the top emergent concerns from the pre-service teachers and will develop presentations. The exemplary teachers' presentations will advise the novices regarding technology integration in the classroom. Data regarding pre-service teacher-participants’ attitudes towards technology integration will be collected and analyzed following these presentations. This award will allow the researchers to present their results at the Association for Educational Communication and Technology Conference, 2012, in Louisville, Kentucky.
COVER SHEET

1. **Title of project:** Technology Integration Concerns: A Dialogue Between Pre-Service Teachers and Exemplary In-Service Teachers

2. **Name and department/school of each investigator:**
   - Krista Glazewski (Associate Professor) - Instructional Systems Technology, School of Education
   - Anne T Ottenbreit-Leftwich (Assistant Professor) - Instructional Systems Technology, School of Education
   - Sinem Aslan (Graduate Student) - Instructional Systems Technology, School of Education
   - Bryan Hoey (Graduate Student) - Instructional Systems Technology, School of Education
   - Aaron Zachmeier (Graduate Student) - Instructional Systems Technology, School of Education

3. **Email address for contact purposes:** Krista Glazewski (Associate Professor), glaze@indiana.edu

4. **Funding level requested:** Phase I ($2000)

5. **Duration of funding period:** One-Time (One Year)
DESCRIPTION OF PROJECT

Introduction

There are three major contributions of this study:

1. **Contribution to current knowledge.** The goal of this research study is to initiate a dialogue about technology integration between pre-service teachers and experienced K-12 teachers who have been recognized for their exemplary use of technology in the classroom, and to explore the results of that dialogue. Other research has explored pre-service teachers’ concerns and beliefs about technology integration, but the authors believe that no study to date has explored such a dialogue.

2. **Contribution to pre-service teachers’ learning in a technology integration course.** The pre-service teachers who will participate in this study are undergraduate students who are enrolled in a technology integration course. Students in this course learn strategies for using technology in the classroom to support teaching and learning. In this study, students will engage in a dialogue with experienced teachers, and will thereby be exposed to an authentic and relevant perspective about technology integration. This study will provide data for formative assessment of student learning and allow course coordinators to improve curriculum for future semesters.

3. **Contribution to the field of teacher education.** The participants in this study are pre-service teachers enrolled in a technology integration course and experienced K-12 teachers who have been recognized for their exemplary use of technology in the classroom. In the proposed dialogue between the two, the experienced teachers will address the concerns of the pre-service teachers related to technology integration. We will explore the results of the dialogue and evaluate the dialogue as an approach to addressing pre-service teachers’ concerns. This study will improve understanding of pre-service teachers’ concerns and strategies for addressing the concerns. The results of the study may be applicable in technology integration courses in teacher education programs.

Background

According to Teo et al. (2008), there are three main factors that affect pre-service teachers’ attitudes toward the use of technology in the classroom: 1. perceived usefulness (the belief that job performance will be enhanced by using a particular technology); 2. perceived ease of use (the belief that using a particular technology will be free of effort); and 3. subjective norm (an individual’s perception that others expect him or her to engage in a behavior). These factors, based on the Technology Acceptance Model (TAM) (Davis, 1989), provide a lens through which one can explore attitudes toward technology use on a case-by-case basis. Teo et al. (2008) found that perceived usefulness and perceived ease of use were significantly related to attitudes toward technology use, and that subjective norm had a strong relationship to perceived usefulness of technology. These relationships suggest that a mentor who expresses a positive attitude toward the use of technology may positively affect a pre-service teachers’ toward the use of technology.

Connected to these ideas of perceived usefulness, ease of use, and subjective norm is the concept of self-efficacy, or what an individual believes he or she is capable of doing (Bandura, 1997). Research has shown that self-efficacy is an important factor in whether or not a teacher uses technology in the classroom, as it bridges skill and action (Ertmer et al., 2002). This
suggests that if a pre-service teacher has low self-efficacy for technology use, he or she will be less likely to integrate technology into his or her teaching, even if he or she has the necessary skills. Ertmer et al. (2002) argued for the importance of modeling as a method for improving self-efficacy for technology use: “Not only can models provide information about how to enact meaningful technology use but they can increase observers’ confidence for generating the same behaviors” (p. 5).

Previous research has identified various concerns and negative attitudes that pre-service teachers have about technology integration (Cullen & Greene, 2011). Exemplary teachers, having experience in situations similar to those pre-service teachers enter when they begin their careers, may be able to address and allay these concerns. In this study, the researchers propose to initiate a dialogue between pre-service teachers and experience teachers. We have conceptualized the dialogue as a developmental interaction. In a developmental interaction or relationship a developer (an experienced teacher in this case) provides career or psychosocial support to a developee (a pre-service teacher) (Douglas & McCauley, 1999). There are many kinds of support, including role-modeling, counseling, and reinforcement (D’Abate, Eddy, & Tannenbaum, 2003).

Methods

Purpose & Research Questions

The purpose of this study is to investigate the concerns of pre-service teachers about technology integration and to explore how pre-service teachers react to the modeling of exemplary technology use by experienced teachers. There are three major research questions:

1. What are pre-service teachers’ concerns about technology integration in their own future classrooms?
2. How do exemplary in-service teachers address these concerns?
3. To what extent do exemplary in-service teachers’ expertise and modeling allay the concerns of pre-service teachers about technology integration?

Research Context & Design

We will use a single case study design, as suggested by Yin (1994). Undergraduate students enrolled in a technology integration course in a teacher education program at a large Midwestern university and experienced K-12 teachers will be the participants of this study. The selection of teachers will be based on purposeful (judgemental) sampling. Five practicing teachers who received Jacobs Educator Awards for exemplary technology use in the classroom have been selected. Data will be collected through a survey and interviews.

Data Collection & Analysis

This research study will use a three-stage data collection procedure. Each stage will inform the next. These stages also constitute the proposed dialogue between pre-service teachers and exemplary teachers. Figure 1 below demonstrates these stages.
Figure 1. Three-Stage Data Collection Procedure

Stage 1: Survey. An electronic survey will be created using online survey tool. The Web address of the survey will be sent to participants’ (pre-service teachers) e-mail addresses. The survey will include demographic information including subject area and grade level focus, and a question about concerns related to technology integration. After the researchers collect the survey data, they will identify commons concerns, which will inform the next stage.

Stage 2: Teacher presentation. The experienced teachers’ presentation will be based on the most common concerns identified in the survey data. Questions regarding the concerns will be given to the experienced teachers before the presentation so that they will have time to prepare their responses. The experienced teachers will present their responses in a face-to-face session. The pre-service teachers will be invited to attend the session by email.

Stage 3: Follow-up interviews. The researchers’ aim at this stage is to investigate the extent to which exemplary teachers’ expertise and modeling allays the concerns of pre-service teachers about technology integration. The interviews will focus on that question. Pre-service teachers will be asked whether they believe that their concerns were adequately addressed and whether their attitudes have changed.

Data sources for each stage are represented in Table 1 below. Creswell’s qualitative data analysis framework (2009) and thematic analysis will be used to analyze data from the surveys, the experienced teachers’ presentation, and follow-up interviews with pre-service teachers.
Table 1
Data Sources of the Study

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
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<tbody>
<tr>
<td>Research Question 1</td>
<td>Pre-service Teachers’ Survey (Questions from Pre-Service Teachers will be collected)</td>
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<tr>
<td>Research Question 2</td>
<td>In-service Teachers’ Presentation (Selected top 10 questions will be addressed and discussed)</td>
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<tr>
<td>Research Question 3</td>
<td>Interviews with Pre-service Teachers (Pre-service teachers who posted one of the selected top 10 concerns/questions)</td>
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BUDGET NARRATIVE

Conference Presentation: The proposal of this research study will be submitted to the AECT (Association for Educational Communication and Technology) Conference, 2012 in Louisville, Kentucky. The funding will be used for researchers working on this project to support their conference related expenses including conference registration, travel and lodging. Total expected expenses are shown in the table below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Estimated Cost</th>
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| Conference Registration| $195 - Graduate Student Registration  
                          $350 - Regular Member Registration  
                          (195*3) + (350*2) = $1285                                                   |
| Travel (Round Trip)    | 210 miles roundtrip at $0.555 per mile (federal mileage reimbursement rate)  
                          2 carloads (210*$0.555) = $233.10                                         |
| Lodging                | 97 per person per night (GSA per diem rate)  
                          ($97*3 days)*5 People=$1455                                                 |
| Meals                  | $61 per person per day (GSA per diem rate)  
                          ($61*4 days) *5 People = $1220                                               |
| Estimated Total        | $4193.10                                                                       |
## RESEARCH PLAN AND TIMELINE

<table>
<thead>
<tr>
<th>Activity</th>
<th>Anticipated Dates</th>
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<tbody>
<tr>
<td>Development of Survey Instrument</td>
<td>By 24th February, 2012</td>
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<tr>
<td>Pilot Testing of Survey</td>
<td>By 27th February, 2012</td>
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<tr>
<td>Data Collection (Survey)</td>
<td>From 5th to 9th of March, 2012</td>
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<tr>
<td>Data Analysis (Survey)</td>
<td>By 12th March, 2012</td>
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<tr>
<td>Teacher Presentation</td>
<td>23rd of March</td>
</tr>
<tr>
<td>Data Collection (Follow-up Interviews)</td>
<td>From 26th to 30th March, 2012</td>
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<tr>
<td>Data Analysis (Follow-up Interviews)</td>
<td>From 31st March to 21st April, 2012</td>
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<tr>
<td>Reporting</td>
<td>By 31st May, 2012</td>
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<tr>
<td>Presentation of the Findings (Pending acceptance of submission)</td>
<td>From 30th October to 3rd November, 2012</td>
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