Constructing Teacher Identity through Extended Technology Field Experiences

Ping Gao
Learning Sciences and Technologies Academic Group
National Institute of Education
Nanyang Technological University, Singapore
ping.gao@nie.edu.sg


Abstract

Drawn from a larger study on preservice teachers’ learning to teach with information technology across three semesters, I present the findings retaining to one preservice teacher’s process of constructing teacher identity from a student, student teacher to a teacher in a social discourse through technology field experience(s). I highlight how this preservice teacher was inspired by her students’ arising interests in active learning from her technology-enhanced lessons, and how she inspired her peers and cooperating teachers by testing the boundaries rather than accepting the status quo. She began to develop leadership potential for enhancing her students’ learning within her classrooms and influencing others beyond her classrooms.

Introduction

While advancement in information technology opens the door to extend learning opportunities for K-12 students, it begins to alter how people think about teaching and learning. Special attention has been attained to prepare new generation of technology competent teachers (British Columbia Ministry of Education, 1999; National Council for Accreditation of Teacher Education, 1998; Preparing Tomorrow’s Teachers to use Technology, 2002). Technology integration in teacher education has attracted great attention in teacher education community. The majority of existing studies uses quantitative research methods to assess the development of preservice teachers’ technology competency and/or the change of individual attitudes toward information technology. Notably, few studies focus on preservice teachers’ uses of information technology in their field experiences (see Kay, 2006, for a review).

Teacher educators, such as Beyerbach, Walsh and Vannatta (2001) and Wang (1999, 2002) among others, argue that preservice teachers need to have authentic technology teaching experiences during practicum and student teaching, because learning to teach with information technology is a complex process situated in multiple contexts. Most recently, studies on preservice teachers’ technology field experiences are emerging. Bullock (2004) identified multiple factors that determine preservice teachers’ technology field practices, including course work, modeling, and faculty expectations, school and district requirements, support from mentor teachers and parents, individual attitudes, and past experiences of using technology. It is found that preservice teachers’ technology field practices have a positive impact toward their attitudes with technology (Mullen, 2001) and their confidence in their ability to function as a teacher (Stulmann, 1998).
Although the abovementioned studies provide rich descriptive accounts of preservice teachers’ technology field experiences but with a focused view of only two aspects of teacher preparation: the period before or during student teaching. Little is known about the influence of using information technology on preservice students’ professional growth as beginning teachers (Mullen, 2001) in general, and the development of teacher identity in particular across teacher preparation programs in particular.

**Purpose of the Study**

This study of the original study was to explore preservice teachers’ process of learning to teach with information technology. This paper is to present one unintended finding that some preservice teachers formed and transformed teacher identity. This paper was guided by one primary research questions: From the preservice teacher’ perspectives, how did technology field practice contribute to the development of teacher identity? The sub-questions: 1) How did technology field experiences informed, reform and transform teacher identity from a teacher candidate to student teacher? 2) How did technology field experiences formed, reform and transform teacher identity from student teacher to a change agent?

**Related Literature**

The constructivist views of learning provide the theoretical framework for this study. Constructivism maintains that individuals create or construct their own new understandings or knowledge through the interaction of what they already know and believe and the ideas, events, and activities with which they come in contact (Cannella & Reiff, 1994; Lerman, 1989; Richardson, 1997). Learning activities in constructivist settings are characterized by active engagement, inquiry, problem solving, and collaboration with others (Bruner, 1993; Collins, 1991). In other words, learning is constructed in multiple ways and through a variety of tools and across people (Pea, 1993), and situated in contexts (Brown et al., 1989), and is emerging and social (Greeno, 1998; Lave & Wenger, 1991; Salomon, 1996; Wenger, 1998). Wenger (1998) views learning as social participation – the individual as an active participant in the practices of social communities, and constructing his/her identity through these communities.

According to Wenger (1998), “there is a profound connection between identity and practice.” Of particular interest to this paper is the literature that explores the relationship between identity and pedagogical choices. A review of literature on identity indicates there are different views on identity. According to Stryker (1980), identity refers to who or what one is, to the various meanings attached to oneself by self and others. Specifically, identities refer to self-characterizations that individuals make in terms of the structural features of group memberships, such as various social roles, memberships, and categories (Stryker, 1980). In other words, people entering a profession experience change externally, which is in the requirements of the specific career role, and internally, which is in the subjective self-conceptualization associated with the role (McGowen & Hart, 1990). Epstein (1978) regards identity as a process “… by which the person seeks to integrate his (sic) various status and roles, as well as his diverse experiences, into a coherent image of self” (p.101). Sachs (2001) views identity as a concept of synthesis, integration and action” (p.153). Wenger (1998) views identity as a way of talking about how learning
changes who we are and creates person histories of becoming in the context of the communities. (p.5)

Britzman (1991) asserts that teacher identity is formed by a *complexity of relationships*, which is "Enacted in every pedagogy are the tensions between knowing and being, thought and action, theory and practice, knowledge and experience, the technical and the existential, the objective and the subjective" (p. 2). Cooper and Olson (1996) suggest that teacher identity is continually informed, formed and reformed as individuals develop over time and through interaction with others. According to Mahlios (2002), novice teachers’ teacher identity is related to their images of teaching when they are aware of and comfortable with their current role and how it fits into their present images/metaphors of teaching and their relative success in their schoolwork context. Proponents of the personal orientation describe learning to teach as a process of becoming or development and they attach various meanings to these phrases.

Marsh (2002) views pedagogical choices and teacher identity from the social discourse by asserting that teacher identity is a process of social negotiation, strongly shaped by our experiences as teacher education students (p. 454). Similarly, Britzman (2003) and Schoonmaker (2003) assert that preservice teachers must have opportunities to actively construct their own meaning about teaching and a sense of teacher identity from their field practices.

**Research Methods**

**Context of the study**

The program of the study is the Inclusive Elementary and Special Education Teacher Preparation Program at a large, private university, USA. This is a four year undergraduate degree program. This program integrates campus courses with field experiences as a way to assist teacher education students in relating theory and research directly to the practices of teaching and schooling. It coordinates undergraduate coursework and field experiences in the schools during the first year of study and the preservice teachers are placed in approximately eight supervised placements during their preparation experience.

Movement through the program is demonstrated by successfully completing campus and field requirements and presenting program portfolios at the end of both Block I and Block II, and at the completion of their student teaching. At the time of this study, the graduates from the program were recommended for certification in both elementary education [Pre K-6] and special education [Pre K-12].

**Data sources**

Through this three-semester study, I collected data from ten preservice teachers who took Block I set of the courses at the fall semester of 2003. They were members of a cohort of 34 preservice teachers who were pioneers in the preparation program for integrating information technology in the teacher education curriculum. For example, the program offered the cohort a new redesigned course that centered on seamlessly integrating information technology into classroom instruction in Block I. In Block II, the program expected that the preservice teachers
needed to teach at least a social study lesson with some technology components. In addition, it offered two “Technology Days” in a format of workshops that took place on campus during the school breaks. During the student teaching semester, the program encouraged the preservice teachers to teach with information technology and required them to report their technology field practices if they had.

The ten participants were selected based on the self-reported comfort level for using information technology in the classroom indicated on the post-course survey after taking the technology-related course. These participants possessed a range of comfort level for using information in the classroom. I interviewed each participant at the end of Block I, Block II and student teaching. Each interview lasted from 45-60 minutes. A total of 29 interviews were audio recorded and verbatim transcribed. I observed and video-taped of 19 technology-based lessons. In addition, I collected three surveys (each one at the end of each semester), fieldnotes, notes from the informal conversation with the participants, observations of the “Technology Days”, each participant’ on-line submissions, their portfolios developed at the different stages of their teacher preparation programs, and their teaching artifacts and the samples of their students work.

Data analysis

As the data was collected in the three phases, the data analysis was on-going. I used the constant comparative method of data analysis to make sense of the data (Bogdan & Biklen, 1998). I conducted multi-phased data analysis. I analyzed the data of each participant and across the participants after the data was collected at the end of each semester. The data were triangulated by purposefully seeking instances of similar input from more than one account to develop categories. I was also attentive to instances in which disagreement existed among participant accounts.

After collecting three sequences of data, I followed the similar procedure for individual participant and across participant data analysis. In terms of analysis of each focus participant, I put the three interview transcripts of each participant in one single word document in a holistic and narrative sequence. I began to read, and reread each set to identity emerging themes emerging themes, and evaluated them based on continued rereading of the existing data (Bogdan and Biklen, 1998). New data were checked against existing categories and new categories were added when necessary (Marshall & Rossman, 1999).

In terms of the analysis across the participants, I began to code general themes and categories for all focus participants. I used the themes and categories to compare and contrast the data for the participant by individual as well as by the participants as a whole. I then construct a concept framework (Miles & Huberman, 1984) containing the dominant themes from the literature review, such as teacher identity and pedagogical choices. I also dimensionalized each theme (Strauss & Corbin, 1998), for example, the theme of developing teacher identity was dimensionalized into: being a student, being an Intern, being a student teacher, and becoming a teacher. I sought patterns and themes, and systematically compared cross the participants.

Major Findings
This paper presents three major findings related to forming teacher identity that evident from one out of ten participants in the study. These findings include forming and informing teacher identity in a social discourse; reforming teacher identity through technology field practice; and transforming into change agents. As was the case with the majority of the participants in the study, Lily engaged in thinking deeply about her own experiences and developing theoretical perspectives about teaching and learning. However, she differed from the other participants, because she made the biggest shift from less assertive to very assertive for using information technology for classroom teaching and learning, and from being tech-phobia to becoming technology advocates. She demonstrated growing development of her teacher identity.

**Constructing teacher identity—Negotiating in a social discourse**

Gibson (1995) asserts that teacher identity is strongly influenced by a teacher’s prior conceptions of teachers. Lily formed her image of a teacher before her teacher preparation experience. Her interests in becoming elementary teachers surfaced in her early years before going to college. Lily knew that she liked children and they made her better understand herself because being with children increased her confidence.

Marsh (2002) asserts that teacher identity is a process of social negotiation, strongly shaped by one’s experiences as a student (p. 454). There are many factors that contribute Lily’s development of teacher identity. Lily specifically mentioned that she, to a large extent, constructed teacher identity by her technology field practices when she needed to negotiate with a variety of factors in a social discourse.

One factor was related to their learning experiences as a student. For example, Lily developed functional knowledge of using information technology, and gained technology awareness and technology efficacy from taking the technology course. Her own hands-on learning experience with information technology engaged her in thinking as an emerging teacher: thinking about teaching and learning both from a student’s perspective and that of a teacher. However, Lily was less comfortable for using information technology for her academic learning and future teaching because she had had no previous technology learning experiences before entered the program. She sounded less assertive about information technology because of her concerns about its reliability, and its potential to isolate students and thus limit social interaction in the classroom. Moreover, she dreaded that her students might know more about technology than she did. Additionally, Lily seemed uncertain about how to use information technology when implementing the student-centered teaching approaches that are emphasized in their university courses:

I think the real challenge is to be able to use cooperative learning and student centered approaches, such as learning centers kind of environment instead of just having the teacher up there doing all the technology and the kids not participating. That’s what we really have to avoid… I don’t think I have had enough training so that I could really answer that with the best answer… (First Interview)

Lily’s uncertainty about the effective use of information technology in the classroom provided her with little motivation for teaching with information technology by saying: “I think at
this point… I will do what is required of me but I am not going to be excessive amounts because I am not ready at this point.” (First Interview)

In addition, Lily had to negotiate with the institutional realities in the schools where she was placed. These realities include technology accessibility, cooperating teachers’ attitudes toward using information technology, school culture, to name a few. Such realities serve as crucial moments for Lily to think critically about technology integration in the classroom. For example, Lily did not incorporate information technology in one of her placements, even though she could easily get access to a variety of technology resources when encountering the “two-world split”. For example, Lily was required by her university professors to plan and teach lessons with a focus on learner-centered approaches. Lily’s cooperating teacher, however, believed in traditional teaching methods. As a result, she had to find a way to juggle these very different philosophies by finding a comfortable balance between these conflicting viewpoints. She chose to follow his cooperating teachers’ lead—not using information technology in that field placement.

Constructing teacher identity from extended technology field experiences

Lily began to use information technology in an inclusive classroom in an urban school during her second Block II placement where there was limited technology facility. When she planned and implemented a social studies unit about the Inventions, she decided to use the Internet to meet the minimum university technology requirement. When she planned her first lesson on inventions, Lily spent hours searching and evaluating websites, and bookmarked the age-appropriate websites onto her own Portaportal page. She made a reservation and brought her students to the school computer lab where she asked her students working in pairs, to search for information. Lily overcame her fear about technology reliability from this experience. In addition, she developed a critical perspective on the “technology inequality” between children from different socioeconomic backgrounds. She felt obligated to provide her students with more exposure to information technology. Lily was eager to provide a second opportunity for her students to use information technology.

During her second technology-based lesson, Lily introduced her students to use AlphaSmart® to produce their intervention report. She invited Alice—a student with an IEP¹ and uses AlphaSmart® on a daily basis—as her helper. At the beginning of the lesson, Lily asked Alice to show her peers how to work on AlphaSmart®: “She did an excellent job, like floating around the classroom, and checking on everyone. It was a great time for her to be a leader because she doesn’t always get in that position” (Second Interview, 5/1/03). At this stage, Lily overcame one of her fears: “sometimes students know much more about technology than I do” (First Interview, 1/20/03). She reflected on the feeling of success and excitement that she shared with her students:

I think it’s really exciting, because it is still very student-centered…They had some kind of a great leadership role…It’s pretty much the way I teach everything…I think technology is a great way to motivate students…They were just so thrilled to be on it and all day long they were asking: “When can I finish my AlphaSmart® report?” So it was just so exciting for them. (Second Interview)

¹ IEP: Individual Educational Program.
Lily was convinced by her own practice that using information technology can enhance collaborative learning among students to reach her goals for involving students in active learning through the effective use of information technology. She learned that learning with information technology could encourage cooperation and discovery. After becoming more passionate about using information technology from her own extended, connected technology experiences, she was willing to spend time in planning for the content, teaching procedures, authentic assessment as well as locating necessary technology resources beyond the classroom.

In her second student teaching placement in a Native American school, Lily thought seriously about how to integrate information technology across content areas to best meet the needs of her Native American students. She used the Internet, Inspiration Software, and a Jeopardy game created on PowerPoint to engage her students in active learning. Her earlier concern about the use of information technology limiting social interaction no longer existed. She began to expand and enhance her understanding about how to effectively use information technology in the classroom. More impressively, Lily developed an understanding about the importance of reflective practice by taking a step back and examining the reasoning behind the uses of information technology:

…I learned from the mistakes that I did. I know that I will not make the same mistakes again. I am more aware of what I need to do next time. I like to use it as much possible as I can…I definitely like to reflect. I like to see exactly what I can do differently and what I can make it go more smoothly…It helps me not only understanding what students have known, but also helps me reflecting on my own teaching and the way I can change. (Third Interview, 12/3/03)

Lily also developed a more panoramic view of her own role as a teacher. And she was developing concrete ideas about the innovative possibilities presented by information technology in classrooms. Impressively, she constructed her understanding about the innovative use of information technology from her critical reflections not only why and how but also when by examining the reasoning behind the uses of information technology. Her emerging practical theory on teaching and learning was constructed through her critical reflection on her own practices.

**Transforming teacher identity into a change agent of technology integration**

It seems that Lily began to transform into an emerging change agent for technology integration. She committed herself into changing the ways that information technology is currently underused or improperly used in the classrooms. She chose to exert her influence on her peers’ learning by dedicating to her peer coaching experience—working as a partner with one of her peers—to learn from and support her peers through professional conversation and critical reflection:

I mostly gave her oral feedback. And we just kind of talked about things. I would tell me a comment and then she would explain more how it relates to the classroom…I gave her a lot of good constructive criticism without making her feel
like she was a horrible teacher or anything like that. I felt that she did the same for me... (Second Interview)

In addition to providing positive influences on her peers, Lily’s technology practices with *AlphaSmart* in the second Block II placement inspired her two cooperating teachers. In addition, Lily provided support for her cooperating teachers by preparing a sheet of good websites posted by her peers, and retrieved them from her university course. She also prepared a “how to do list” about using the Portaportal utility for her cooperating teachers. She explained: “I think that is something that is an easy concept for teachers to understand. It’s a good way to use technology but it is not that hard to use at all. So I think I have introduced some ways to use technology for my host (cooperating) teachers” (Second Interview, 5/1/03). She continued to demonstrate her influence on her cooperating teacher in her two student teaching placements. Particularly, she made a positive influence on the school librarian from whom she sought help.

In brief, Lily was risk-oriented and collaborative to seek and find challenge and growth. Consequently, she earned trust and acceptance. She began to emerge herself as a teacher and a change agent, as she assumed that giving back to teaching profession is a part of her duty. The other six participants showed the similar stable pattern of constructing teacher identity from their extended and connected technology field experiences. Lily is not exceptional in this aspect.

**Limitations, Discussion and Implications**

There are many constraints to this exploratory study, including the response bias, the context-specific nature of the study, and limited lesson observations. However, the findings from this paper suggest that reforming and transforming teacher identity from technology field practice is an active process in which preservice teachers get to know themselves as emerging teachers (Britzman, 1993), get to know their students (Grimmett & MacKinnon, 1992; Cochran, DeRuiter & King (1993), and get to know the curriculum and the school culture (Zeichner, Tabachnick & Densmore, 1987). Thus, constructing teacher identity and understanding about pedagogical use of information technology is a developmental process. This developmental process is demanding and complex situated in a social discourse. The implications for teacher preparation programs are suggested below:

A challenge that the participants confronted is the two-world split (Feiman-Nemser & Buchmann, 1985). This split is presented as the discrepancy between theory and practice, university’s vision of technology integration and the realities of field placements, university expectations and cooperating teacher preference of teaching approaches, as well as time constraints and the type of placements. In some field placements, the preservice teacher could not implement the kind of teaching advocated by their teacher preparation program, because they were restricted by these cooperating teachers who are oriented to conventional teaching approaches. The participants were often stuck in the middle. They needed to negotiate meaning and find a balance between the two. This finding raises the question: what can teacher education programs do to guide their preservice teachers in negotiating the meaning between the two worlds? There is no easy solution for it, but some possibilities.
In order to prepare future teachers to be able to integrate information technology into classroom instruction, on one hand, teacher education programs should provide more opportunities and resources for preservice teachers to become more knowledgeable about a variety of technologies, and require them teachers to use information technology across different stages of their teacher preparation and across different curricula areas. On the other hand, it is imperative for the teacher preparation program to holistically strengthen professional development school which stresses professional teacher preparation, faculty development, inquiry directed at improvement of practice, and enhanced student achievement (NCATE, 2001, as cited by Neapolitan, 2003). It is evident that it is the cooperating teachers’ attitudes rather than their technology skills that make a huge impact for the preservice teachers’ decision for using information technology in the classroom. It is also noted that most in-service teachers can not mentor preservice teachers for the effective use of information technology. Accordingly, it is vital to pair a preservice teacher with a cooperating teacher who embraces constructivist beliefs about teaching and learning. It is also important for teacher education programs to encourage preservice teachers to observe each other in the classroom, provide feedback, and engage in reflective dialogue. In addition, teacher preparation programs should engage preservice teachers in conducting action research on their technology field experiences at different stages of teacher preparation program. Thus they become researchers in the practice context (Schön, 1983).

One of the encouraging findings from this paper is that Lily emerged as a change agent for technology integration by demonstrating her leadership potential. Sirotnik (1995) defines teacher leadership as "the exercise of significant and responsible influence" (p. 236). Suranna (2000) perceived teacher leader as an accomplished teacher inside the classroom, one who is open to current educational theory and practice, and one who holds students to high expectations while consistently offering them care and support. Although Lily is not a novice, she benefited from the discourse with others, particularly with their peers, that facilitated the process of developing meaning of teacher identity and collegiality. She developed leadership potential either through her role modeling of the effective use of technology, or supporting and teaching her peers and cooperating teachers in terms of using information technology, and thus bringing her cooperating teachers and peers along with her in her zeal.

The implications of teacher education are suggested as well. Arguably, learning to teach with information technology is unlikely to differ greatly from learning to teach in general. Future research is needed to know whether the results found from this study can be replicated in other contexts that involve preservice teachers in learning to teach, such as the relationships between the processes and outcomes of teacher education program (see Zeichner & Schulte, 2001), and relationship between teacher knowledge and teacher thinking. Additionally, studies of the relationship between preservice teachers’ general field teaching practice and technology practice are needed. For instance, how preservice teachers build their understanding of constructivist learning theories and how they commit to integrating information technology to enforce constructivist-based teaching approaches. It is also necessary to conduct large scale, longitudinal studies on preservice teachers’ professional growth starting from the beginning of teacher preparation, and extending to the early years of teaching regarding using information technology.

As teacher identity is a complex self-discovery process, involving considerable negotiation and interaction between thought and action, and conceptual changes. It is also an on-going process that involves the preservice teachers to construct, deconstruct and reconstruct their understanding
about pedagogical use of information technology from reflecting on their own practice. In conclusion, preservice teachers can construct teacher identity from their extended and connected technology field experiences.

References


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