

Running Head: URBAN TEACHER BLOGGING

Blogging as Support for an Urban Science Teacher's Professional Identity Development

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Abstract

Teachers need ongoing support as they face new challenges and develop a more sophisticated sense of professional identity as reform-minded practitioners especially in the challenging conditions of typical urban settings. The potential of online web logging (blogging) to support teachers in their identity work is only beginning to be explored. In this case study I examine "Ms. Frizzle," one reform-minded urban middle school science teacher and exceptional blogger, who used her blog in ways that encouraged identity work and helped her develop a professional sense of self as an urban reform-minded science teacher. Findings suggest that Ms. Frizzle used her blog to construct stories of multifaceted aspects of science teaching that are often in tension with one another, simultaneously support and be supported by a professional community that spanned traditional geographical, ideological and institutional boundaries, try on and develop a variety of interrelated professional sub-identities, and position herself centrally within a larger professional discourse. Consideration is given to the various types of investments Ms. Frizzle made in her blogging, and corresponding implications for teachers and teacher educators are articulated.

Introduction

I've said it before, and I'm sure I'll say it again: you know you're a science teacher when you buy vinegar by the gallon and baking soda in a five pound box. And you know you're a NYC science teacher if you bring it to school on the train. 02-13-06

Participating in reform-based science teaching introduces a significant set of challenges including, but not limited to, developing skills, attitudes, and understandings that are just beginning to be understood by practicing science teachers (Edelson, Gordin & Pea, 1999; Krajcik et al., 1998). Urban science teaching means addressing additional challenges including engaging students who typically have an under-developed sense of school-based identity in rigorous, open-ended science knowledge construction, challenging society's stereotypes about urban teachers' as well as urban students' academic competence, and working within systems that are often inequitable and discriminatory (Lee, 2005). These among other challenges can make ongoing learning and professional identity development of urban science teachers extremely difficult. The result is often a lack of science instruction aligned with reform-based practices, especially for those historically disadvantaged students who need quality education the most (Lee, 2005; Oakes, 1990; Polakow, 2000).

Building understandings, developing skills, and forming attitudes that ultimately lead to effective student learning require teachers to engage in ongoing professional development and reflection (Putnam & Borko, 2000). Considering alternative, reform-based forms of science teaching requires teachers to examine beliefs and practices that are often tacit. In addition, the complexity of reform-based science teaching means that science teachers will likely be meeting an ongoing stream of endless new challenges (Edelson, Gordin & Pea, 1999). Teachers engaged in reform, thus, need a place to reason "out loud," in a way that brings rationale, feelings, and practices to the fore for both individual consideration as well as community support (Luehmann, 2002; 2004). This professional learning within the discourse of science teaching, including the practices, values, and language of this sub-culture, is considered the professional identity work of a teacher (Beijard, Meijer & Verloop, 2004).

The web log ("blog") is one tool that holds potential to support professional growth for teachers. A blog is a frequently-updated personal online space (a type of web page)

where an author publishes a series of posts, engages others in discussion about her posts, and collects and shares resources. These posts are searchable by categories and archived sometimes over a long period of time usually in reverse chronological order thus presenting the most recent work first (Nardi, Schiano, & Gumbrecht, 2004). The activity of blogging, due to its context and features, has been argued to offer bloggers (the owners/writers of the blogs) access to a number of potentially valuable resources to engage in professional work (Efimova & Fiedler, 2004). Teachers are beginning to use this tool to construct personal yet professional public spaces where they wrestle with issues related to their work on an ongoing basis (see, for example, www.msfrizzle.blogspot.com) (Downes, 2004). For example, a search for blogs that contain the words education, teaching, or teacher in the title yielded 392, 423 results (search conducted April 9, 2006 on <http://www.blogger.com>). Though many teachers are using them, we know little about the details of how or why.

This study focuses on the blog created by an urban science teacher who calls herself “Ms Frizzle,” and through her posts, demonstrated a commitment to reform-based science teaching practices and to engage students in meaningful science learning in an urban context. The research question guiding this work is, **“How did Ms Frizzle use her blog for professional identity work?”** Findings of this study highlight powerful uses of blog affordances that supported this urban science teacher’s quest toward meaningful and just science education for her students. These powerful uses included the crafting of meaningful stories about herself and her practice, the development of a unique professional community that extended beyond geographic boundaries, the positioning of herself centrally in a larger professional discourse, and the development of significant different but related sub-identities (Gee & Crawford, 1998) through both reflection-on- and reflection-in-action (Schon, 1987). While this teacher blogger is certainly exceptional, and thus these results cannot be immediately generalized to all science teachers using blogs, they help us identify potential affordances of blogging for professional identity development that could be capitalized upon more explicitly by other teachers and teacher educators.

Conceptual and Theoretical Framework

Identity and Discourse

Learning, including teacher learning, involves identity development. Gee (2003) argues that all learning "...requires identity work. It requires taking on a new identity and forming bridges between one's old identities to the new one," (p.51). Gee argues that as someone is actively engaged in their learning, she must be willing to try on a new identity, working to reconcile and relate this new sense of self with other identities she formed previously. There can be risk associated with trying on new identities, especially if they are at conflict or not well-aligned with other more strongly-held notions of self. Gee (2003) emphasizes the value of offering learners support for this "trying-on" through what Erickson called a psychosocial moratorium – "a learning space in which the learner can take risks where real-world consequences are lowered," (p. 62). The affordances of different activity structures (e.g. those that afford anonymity) offer learners access to such safe places.

Teacher learning, like all learning and development, occurs through participation in a social world in which the discourse is constructed and defined by an existing community. Lave (1996) defines learning as "first and principally the identity-making life projects of participants in communities of practice" (p. 157). Learning is much more about the changing of identities, the becoming of a certain kind of person, than it is about the acquisition of new knowledge. Being recognized by self and others as a certain kind of person in this community is, in part, determined by the sociohistorical culture of science teaching and in part, is open to individual choices by the teacher learner (Gee, 2003).

Identity is characterized, refined and stabilized through the subjective evaluation of one's performance of skills, ways of participating, and roles assumed in the activity structure at a given time in a given event (Nasir, 2004). Specifically, "a primary way individuals make sense of experience is by casting it in narrative form" (Riessman, 1993, p.4). It is in the telling that the author makes meaning, defines values with respect to this meaning, and integrates beliefs into the becoming of a certain kind of person, in this case, a certain kind of science teacher. Analyzing identity through narrative may have little to do with the accuracy of the stories. "They are constructed, creatively authored, rhetorical,

replete with assumptions, and interpretive” (Reissman, 1993, pp.4-5). This personal construction of one’s stories or other social utterances is the process of situating oneself within a particular social world. The process of identity construction can be, at least in part, an act of agency – actively bidding to be recognized as a certain kind of person. An individual’s series of significant stories constitutes a trajectory through time of becoming a certain kind of person (Sfard & Prusak, 2005). Gee describes this identity work as one’s “projective” identity. This more day-to-day participation in a community of practice can be more or less successful with respect to developing into the kind of science teacher one hopes to be.

Identity embodies the varied and complex ways a person is recognized in relation to others. Studying teacher growth, learning and development from the perspective of identity work affords offers a more long-term and holistic look at the persons doing the growing – “who I am” involves more than cognitive growth and development. In addition, studying teacher growth by attending to identity development offers an in-depth exploration of how well various activity structures serve to bridge a participant’s “real” identities (how one is currently recognized by self or others) with her “projected” identities (how one hopes to be recognized) as a certain kind of science teacher. Finally, studying identity development allows both an in-depth look at work done within a particular context (such as working with kids in a classroom or with colleagues in a faculty meeting) as well as across contexts (how does work in these various contexts impact participants’ desired identity as a master teacher). It involves participation and positioning within a community of practice (Lave & Wenger, 1991), or what Gee refers to as big “D” Discourse (Gee, 2005). Gee defines Discourses as “ways of combining and integrating language, actions, interactions, ways of thinking, believing, valuing, and using various symbols, tools and objects to enact a particular socially recognizable identity,” (p. 21).

Blogs and Blogging

As mentioned in the introduction, a “blog” is a collection of multi-media narratives and web links posted on the Internet, usually published in reverse chronological order. Blogging can be considered a creative outlet because, though structured to some degree to support usability by people without technical expertise, this

practice allows choice with respect to layout and look: the amounts and types of inclusion of external links, and the types, lengths and frequencies of posts. Most blogs allow “bloggers” (the ‘owner’ of the blog) to use digital images, embedded links, and other media to support their writing. In addition, most blogs support readers in making and publicly posting comments to individual blog posts. “In essence weblogs allow an individual to simply publish, organize and develop knowledge in their own online space” (Farmer, 2004, p.7).

There are several conceptual reasons that suggest that blogging can be conducive to identity work. First, because identity development has been shown to not only be represented in people’s stories, but actually constituted in the act of telling stories (Rosenwald & Ochberg, 1992; Sfard & Prusak, 2005), blogging holds much potential to support this projective professional identity development. As an easily updateable forum for narrating, it offers a public, interactive place for individuals, and in this case teachers, to collect and relate events, impressions, understandings, feelings and opinions over time that they determine to be significant. In this way, blogs, like learning logs or reflective journals, offer participants an opportunity to reflect-on-action which has been shown to be effective in supporting learning, especially for adults (e.g. McGuinn and Hogarth, 2000). Second, the blog structure allows as well as invites others to participate as readers, commentators, users, and more generally, community and thus naturally provides opportunities to be recognized by others as a certain kind of teacher. Like teacher journals, blogging thus allows for reflection-on-action (Schon, 1987) yet avoids one of the significant drawbacks regarding the ethical dilemma of reading someone’s private writing (Davis, 2006). In addition, as an activity structure, blogging offers the learner (in this case, teacher learner) a number of resources that have been shown to support identity development (Nasir, 2004): many ways to display competence, a high level of agency, ways to solicit feedback, opportunity to be held accountable, and central positioning as the author and lead “actor” in the stories.

Blogs have been used in different ways by teachers. Most often they are used as pedagogical tools to support students’ learning (Ferdig & Trummell, 2004; Martindale & Wiley, 2005). More recently teachers have begun “blogging” (maintaining and updating a personal professional blog) *about* their work, experiences, opinions and questions about

their profession. In this way, teachers are using blogs to wrestle with issues central to their practice – sometimes about urban contexts, sometimes about science teaching, sometimes about middle school students. Though these blogs have a professional primary focus, they often consist of a mix of personal and professional narratives, sometimes within the same post (Downes, 2004).

A number of papers (mostly published in non-peer reviewed media) explicate potential advantages for blogs to support teaching and learning (and thus teachers' pedagogical as well as personal professional learning) and advocate for their use (e.g. Downes, 2004), although empirical research studies published in peer-review media are very rare (Williams & Jacobs, 2004). The majority of the educational considerations of blogging so far has explored teachers pedagogical use of blogging with their classes (often journalism classes, and mostly in the higher education settings) (Martindale & Wiley, 2005; Williams & Jacobs, 2004). The value of blogging in the specific domain of teacher learning is only now beginning to emerge (Luehmann, under review), a profession documented to fraught with challenges of isolation (Hargreaves, 1994). Though valuable, a consideration of a committed blogger engaged in the practice in substantial, sustained way offers the field insight into the possibilities this new media affords learners, specifically teacher learners, in their ongoing professional identity development work.

The Study

The results reported in this paper are derived from a larger study of Ms. Frizzle's blog. I consider her blog exceptional and revealing, and thus valuable and important, because it offers uncommon access to longitudinal, in-depth and frequent teacher narratives composed by a science teacher who explicitly aims at engaging her urban students in academically rigorous, reform-based school science. Furthermore, while I never met Ms. Frizzle in person, she was accessible as well as willing and interested in participating in this study.

Ms. Frizzle's public professional blog was also chosen as the focus of this case study because it consists of frequent, in-depth narratives of day-to-day reform-based science teaching in an urban context. Ms Frizzle's case was, in some ways, typical: she is a white, middle-class person teaching students unlike her; that is, she teaches

demographically diverse (61% Hispanic; 38% Black; 1% Asian or other) and economically disadvantaged students in an under-resourced urban school. In other ways, Ms. Frizzle's case is inspirationally atypical: she consistently engaged her students in scientifically rigorous academic study including open inquiry; she highlighted and celebrated her students' engagement and achievement; and she documented through the use of her blog, extensive, in-depth and frequent day-to-day issues of urban science teaching. Though during the academic year that serves as the focus for this study Ms Frizzle is only a fifth-year teacher, her narratives demonstrated that she has passed the initial stages of teaching during which the focus of teacher reflections usually centers on survival and management (Bullough, 1989; Huberman, 1989).

Analysis

One academic school year of Ms. Frizzle's posts (August 2004 – June 2005) consisting of 316 posts and 2888 comments was analyzed. Readers can access all blog data used in this study at <http://msfrizzle.blogspot.com>.

The data analysis method I chose was grounded theory (Strauss & Corbin, 1998). My familiarity with the urban education, urban science education and science education literatures informed the design and revisions of the research question as well as the framing of the emergent assertions. However, because of its revelatory nature, it was important that the uniqueness of Ms Frizzle's case be allowed freedom to "speak" to the issue of an urban teacher's use of blogs for professional identity development. I kept a journal throughout the course of analysis in which I logged emerging themes and the ongoing questions they inspired. Approximately once weekly, I emailed Ms. Frizzle the results of my analyses, including assertions and further questions. She responded with her impressions on both as well as challenging new insights that significantly informed the direction of the work.

As part of the larger study, each of Ms. Frizzle's blog posts was coded independently by two researchers with respect to: (1) the "focus" or topic of the post; (2) the "type of work" Ms. Frizzle engaged in (such as documenting or ranting); and (3) specific features of blogs used (such as hyperlinks, images, etc.). Seven sets of posts on reoccurring themes (incorporating richness in the curriculum; understanding and valuing student culture; pedagogy light of standardized testing; professional development -

learning to incorporate “accountable talk;” educational blogging; commitments to helping *all* students succeed; and pedagogical content knowledge – catering science instruction for specific students) were also identified and analyzed in depth to determine how Ms. Frizzle worked through a specific issue over time and what she learned and gained as a result. (See Luehmann, in review, for more detail on the research design of the larger study.)

The results reported in this paper capitalized on this preliminary analysis of the data to identify themes and relevant data as a means to address the more specific research question: “How did Ms. Frizzle use her blog for professional identity work?” Findings have been organized along the following main themes:

1. Telling powerful stories of oneself and one’s practice
2. Fostering a unique professional community.
3. Demonstrating competence in a variety of professional roles (i.e. developing sub-identities).
4. Positioning oneself in larger professional discourses.

Before reporting key findings for each of these themes, however, I will report some general information about Ms. Frizzle and her professional “world” to provide a context for the remainder of the data.

Context

Ms Frizzle’s School and Students in her own words. Ms Frizzle described the context of her current teaching in these excerpts from a post dated February 18.

“The children I work with in the Bronx come from low-income families. They enter school not having had access to the same kind of medical care, nutrition, early childhood education, books in the home, etc. that children from middle class homes typically have. From the very start, many of these children are behind. They need schools that will help them catch up, so that they may enjoy an equal opportunity to pursue their dreams, the American dream.

”Let me tell you a little about my school. The heating system is unreliable, so classrooms are often (and unpredictably!) far too hot or far too cold for comfort. The cafeteria is noisy and unclean. We have no true gymnasium; instead we have rooms with hard floors and walls, basketball hoops but no markings on the court, and concrete pillars in the middle of the room.

”I teach on the fifth of six floors, but our school has no elevator. I don’t know what we would tell a disabled child or parent who wanted to attend our school but could not enter the building or climb the stairs to our classrooms.

”Classes are crowded. The middle school where I work has comparatively small

classes of 27-30 students, yet we still have difficulty squeezing that many children into the classroom while still providing space for them to put their books, do science experiments, etc. In other schools, classes are far more crowded. We need additional funding so that we can hire more teachers and break up large classes so that children can get more individualized attention. Additional funding could also hire school nurses and counselors to treat children's physical and emotional problems, which will improve their overall well-being and school attendance.”

Ms Frizzle’s Responsibilities and Roles.

As a fifth year teacher, Ms Frizzle wore a unusually large number of professional “hats” including official positions such as science teacher, department chair, school founder, Science Expo coordinator, and drama coach as well as unofficial positions such as faculty-administration mediator, new teacher mentor, and social justice activist. As one of a small number of faculty members in a new school committed to effective and equitable urban education, Ms. Frizzle assumed ownership of a wide range of issues and challenges including, but not limited to, teachers’ paper supply, student graduates’ next school placements, science fair projects for all students (even those she didn’t teach), and accessing unusual classroom resources like squids to be used for dissection.

Ms. Frizzle’s Pedagogical Practice

Ms. Frizzle’s blog was replete with her pedagogical priorities of student-centered, rigorous science learning for her students in the Bronx. Vehemently opposed to expecting less of her students due to their disadvantaged circumstances, Ms. Frizzle used her blog to detail experiences and environments that engaged students in authentic scientific practice and knowledge construction. One example of such practice is offered in this post on her perceptions of appropriate student presentations (March 31):

Finally, the most important point for good presentations by kids: they should never, never just regurgitate information. They should always have an interpretative task. I have them design experiments and present their results in PowerPoint. I had them read about problems facing the anuran (frog & toad) populations globally and propose research projects to investigate the problem further. They presented as though it were a conference.

Not left as merely pedagogical goals, Ms. Frizzle used her blog throughout the academic year to demonstrate and celebrate diverse forms of student achievement: engagement, growth over time, academic accomplishment and personal ownership. Detailed descriptions of her work combined with verbatim student work served to challenge the

notion that rigorous reform-based science education is possible in typically disadvantaged urban settings.

Theme 1: Telling stories of oneself and one's practice.

Most fundamentally, Ms Frizzle's blog is a place for her to construct and share her stories, and thus construct meaning and identity with respect to many complex and inter-related issues that constitute her urban science teaching. In Ms. Frizzle's own words, "Since this is my space to tell these stories, read on," (August 16). On this day, she proceeded to compose "A True Story," (Appendix A) a passionate poem written to and about Louis, a student described by Ms. Frizzle to be thoughtful, damaged, tough, yet vulnerable. She writes about his abuse at the hands of a colleague and her seemingly ineffectual attempts at advocating for him at a time he needed it most. This post is a strong representation of how "telling stories" enabled Ms. Frizzle to use her blog for professional identity work: most significantly in this example, she reflected on past events while simultaneously "wrestling" with issues regarding the nuanced, important, and often very difficult political, ethical and emotional aspects of teaching that are not often addressed in typical professional development work.

Ms. Frizzle's blog is replete ($n = 78$) with such detailed stories about her professional practice describing a wide variety of facets of science teaching such as assessment, content, curriculum planning, the events of given day or week, pedagogy, and mentoring of new science teachers. Some stories included a number of these aspects in one story. For example, the following story introduced her readers to an instructional approach she decided to try called the "Winogradsky column," a method used to demonstrate how different microorganisms perform interdependent roles. In what follows, I inserted hard returns, headings, and spaces between lines of text, dividing this one post into four sections as a means to highlight the different aspects of Ms. Frizzle's professional work through story-telling on her blog:

Introduction of an instructional approach

Wednesday, I discovered a possible limit to my tolerance of chaos-in-the-name-of-science: the Winogradsky column. To make a Winogradsky column, you mix pond mud, water, a raw egg, and shredded newspaper and pour them into a cylinder (spring water bottles, for example). Then you cap them, put them near a light, and observe over time as bacteria of different kinds and colors grow at different levels within the bottle. Easy enough, right?

Management considerations

I did not think through the process of getting the mud into the bottles, so I found myself feeling that things were perhaps just slightly out of control as my students proceeded to pour mud all over the desks in my classroom. Looking back, I must admit they tried. Funnels would be an obvious improvement for the future.

Pedagogical considerations

Yesterday and today, I got them started on their observations. We put one bottle in the dark, one in natural classroom light, and one in front of a bright light. Each day for the next two weeks, they are to draw and describe what they see in the bottles. So far, white clumps have formed within the bright and natural light bottles; we'll see what develops over the next few weeks! In theory, we'll be able to see layers of aerobic and anaerobic bacteria, with more photosynthetic bacteria in the light conditions. I'll keep you up-to-date.

Reflection

I will say this. I left school on Tuesday feeling a little disillusioned by the Winogradsky experiment; it seemed like too much work and mess to be worth it. But I am emphasizing careful observation with my students, and giving them plenty of time to make detailed drawings and take descriptive notes, and they are doing an excellent job. Their drawings are much, much better than any they've done before. So this may turn out to be a good way to teach observation skills. (October 25, 2004).

Note that this story, like the previous one, does not consist of simply documenting an event – in this writing, she defined the context, articulated her feelings, and critically considered competing perspectives (management and pedagogy). She engaged in professional identity work by recognizing her professional limits, identifying potential future improvements, articulating pedagogical priorities and giving voice to her underlying emotions. In addition, she used this story to begin a conversation with her blogging readership (e.g. “I’ll keep you up-to-date”) that she did in fact honor – publishing updates on her use of the Winogradsky Column in two additional posts (November 3 and 9). Sharing stories with these “others” allowed her additional opportunities to be recognized as a certain kind of teacher – in this case, descriptions of her teaching might include innovative, hands-on, controlled, and committed to helping students develop skills of inquiry.

Fostering a Unique Professional Community

The structure and functionality of the blog allowed Ms Frizzle to establish, encourage, and nurture a unique professional community. More than just a readership, a blogging community has unique characteristics. In some ways, it is like an audience of a

popular music group performance that includes an unpredictable mix of some regulars and some newcomers who are generally appreciative or curious of the work being done. In other ways, the blogging community is much different than this audience – it can be more active and interactive. One blogger often builds on the work of another, often within a very tight time frame. One blogger’s post often sparks another blogger to reflect, comment and develop her own impressions and implications on her blog. The “comments” feature is used as another means by which the blogger and the blogosphere interact and challenge one other, often (in the case of Ms. Frizzle, for example) resulting in “uptakes,” conversations that ensue between commenters, not necessarily involving the original blogger. Though often connected by common themes (in this case, education, urban education, and blogging), the community likely consists of diverse participation due to the blog’s public and searchable structure and historical record.

The Who of Ms. Frizzle’s Community. Ms. Frizzle described her professional blogging community to consist of five groups of people (email, March 5, 2006): mentees, “real” people, experienced professionals, issue people, and the unknowns. She perceives the largest group in her professional blogging community to be teachers, mostly new teachers, whom she mentors through her blog. She described her awareness of this group in this email (February 12, 2006) written to me:

I still think of myself as a fairly new teacher, but I have come to realize that my role in blogging is, more often than not, mentoring of new teachers. Some will actually write to me in the comments or emails, asking for specific kinds of advice, but for the most part, I am unaware of who is out there and what kind of ideas they may be taking away from my writing. Then, later, they will leave some kind of note acknowledging that they have learned something from my blog.

In a number of posts, she made direct statements of encouragement to her teaching community. For example, this post offered beginning-of-the-year encouragement to her teacher blogging community:

Keepin' It Real

[Hipteacher](#) and [posthipchick](#) and [class is in session](#) all have excellent posts on the joys and challenges of the first few weeks of school.

I think you can tell who is going to make it in teaching, because they are the ones who sneak hope into their most negative posts. I see this when Miss Teacher writes,

"and another that has bought the line that they are stupid so they don't try to do anything but get away with murder. i swear i will have them reading and writing by the end of the year. or i'll die trying. it's a deadheat right now."

And I see it throughout [hipeacher's](#) writing, for example,

"I really enjoy the "bad" kids. They are often pains to have in class and disrupt learning every five seconds, but I really like them--even the ones who want to grow up to be pimps."

Good luck to all the new and returning teachers out there!

More about Ms. Frizzle's mentorship will be addressed later in the section describing Ms. Frizzle's use of blogs to assume and develop different aspects of her professional identity.

The second group of Ms. Frizzle's professional community consists of a smaller number of people she called "real" and defined as "...people whom I have met or feel as though I know pretty well, most in NYC but one or two elsewhere." When reading her blog, one comes across a number of recurring identities such as "posthip chick," "hipeacher," "Chaz," and "JennyD" in the text of her blog (often hyperlinked) and as authors of the comments. Of the published comments whose authors identified themselves using a name (not including responses from Ms. Frizzle), seven people posted an average for four or more comments in a given month (approximately once/week); fourteen people posted an average of between two and four comments in any given month; twenty-six people posted an average of between one and two comments per month, and 119 people posted an average of between zero and one comments per month.

Ms. Frizzle explained that her small "real" community developed bi-directionally, from her blog to in-person and from in-person to her blog. For example, three of her colleagues/friends began by reading and commenting on each other's blogs, eventually leading to the use of email she calls a "back channel" to follow up on a blog post in a more private space. They ended up going out socially (in person), and now meet regularly with others at a teacher blogger happy hour that Ms. Frizzle established and maintains to support community building of NYC teachers. In addition, a few of her in-person friends read her blog to find out what is going on in her life.

The third group is experienced professionals who are “out there” and whom she calls on if she needs advice. Publishing itself is an act that implicitly solicits feedback. Making one’s work public invites others to develop opinions about its assertions. The immediacy of blogging combined with the opportunity for readers to post comments give the blogger ways to solicit feedback and suggestions that can be incorporated and used in a timely way. Often times, Ms Frizzle addressed her readership directly asking them for advice or opinions. For example, when she was composing her application essay for a Fulbright scholarship, she posted her draft (October 11) and asked her readers to help her improve it. Later, after thanking her community for their helpful comments, she posted a revised draft (October 15). Feedback on her posts in general was given to Ms Frizzle in three known ways: through public comments, private emails, and “track-backs” (the inclusion and often critique of Ms. Frizzle’s post in another person’s blog) (email, March 5, 2006).

A fourth group of people challenged Ms. Frizzle by exposing her to and engaging her with more global educational issues. Ms Frizzle used her blog to bring together and synthesize resources, lessons learned, and dialogue from multiple disconnected sources (e.g. her email, school, students, community, Internet resources, teacher union mailing) to participate in larger educational “Conversations,” (with a capital C), which Gee (2005) defines as “all the talk and writing that has gone on in a specific social group or in society at large around a major theme, debate or motif” (p.22). For example, a topic such as the need for funding in public schools constitutes a Conversation in Gee’s sense. The following post offers a brief example of one of Ms Frizzle’s common practices of engaging in education Conversations:

Incidentally, Jenny D. (among others) received the same email that I did and asked some important questions. I agree with her that more money does not necessarily equal better schools, but I think that does not excuse a funding disparity that hurts the kids who are already hurting most, (February 18).

Ms. Frizzle explained that she reads about five blogs daily, another five or so weekly, and a few others less frequently than that. She used her blogroll to monitor her reading. A blogroll is a collection of links to other people’s blogs or websites made available on the homepage of one’s blog. She described herself as open to intriguing articles and issues through news media or other venues. “A lot of it is just kind of absorbing stuff

through reading, not necessarily seeking out information, but finding it anyway. I wouldn't have considered myself well-informed if it weren't that friends & other teachers have noticed... and I have to attribute it to blogging," (email, March 5, 2006).

Finally, Ms. Frizzle acknowledged there is a one last group of those who participated in less obvious ways: those who she doesn't know but who are "out there." Though they may appear to be mere lurkers, this final group of Ms. Frizzle's community includes people who, in fact, have the potential to use their engagement with her blog to impact significant systemic change. Ms. Frizzle has been blogging for three years, and just recently she learned that members of her union and the Department of Education are engaging with her online work.

Although, lately, it's become clear to me that there are high level people within the union reading my blog and others and passing on certain posts to even higher level people. And I also know for certain that I/we have several readers within the DOE, though I'm not sure how high that goes. So I am beginning to get the sense that people are paying attention. I can't say it transfers into any actual change, though, (March 5, 2006).

Though she does not have access to the impact of this engagement, her blog has given her a "voice" in a unique professional community that certainly spanned institutional, ideological, and geographical boundaries.

The How of Ms. Frizzle's Community. One key window into a blogger's community is through the "comments" section. A relatively recent post by Ms. Frizzle (March 2, 2006) resulted in six comments that illuminated something about her blogging community. Her post was titled, "Three Days' Worth of Questions (And These Are Just The Ones I Can Remember)" in which the bulk of her post was about humorous or thought-provoking questions that arose in interactions between Ms. Frizzle and her students over the past three days. Of the 46-lined post, 42 lines focused on professional issues, and one sentence toward the end of the post was "I'm going to make a chocolate cake with mocha frosting." Her six comments (thus far, 3/4/2006 – more could be added as the public can comment as long as the blog remains online) consisted of two people sharing their own student questions, one making a witty remark, and one commenting on the chocolate cake. In addition, a short dialogue ensued between the first commenter ("anonymous teacher") and another one ("anonymous") resulting in the first commenter

posting again to clarify her comment. Though the post was predominantly focused on the professional issue of student questioning, it sparked interaction from people interested in the personal as well as professional matters. It also resulted in an “uptake” in which the conversation continued without the direct input of Ms. Frizzle.

Ms Frizzle demonstrated her awareness of her community and actively nurtured it by offering detailed posts and anticipating possible questions: “For those who are wondering about our early start date, my school is one of the new small schools that the city is promoting and starting” (August 28). She valued her blogging community as is evidenced through her solicitation of input, references to other’s work, and thick descriptions of issues. As acknowledged by Ms Frizzle, this community (and thus her impact) extended beyond those of which she was consciously aware (email, March 5, 2006).

Another way Ms Frizzle developed and nurtured a community that extended beyond traditional boundaries is through her blogroll. Ms Frizzle’s blogroll is long and includes many (at least 44) teachers’ or educators’ blogs (identified as such by referencing to teaching, schooling or education in their names). On August 30 Ms Frizzle used the following post to welcome a new member to her community in both words and actions. Using the blog’s functionality of embedded links as well as the blogroll, Ms Frizzle created a semi-permanent connection between this relatively unknown urban teacher blogger and her existing community.

Welcome, Ms. Oh

I just discovered another teacher who works in the NYC public schools and keeps a blog: [Ms. Oh](#). She's been blogging a bunch about the reality of finances for teachers along with nuts-and-bolts stuff for teachers new to the NYC system. I'll add her to my sidebar (August 18).

Ms Frizzle also nurtured her blogging community by “christening” the major players in her in-person professional life. Giving local colleagues meaningful pseudonyms such as Ms Pascal (math), Mr. Richter (earth science), Ms. Dean (dean) or Ms. Principal (principal), she used her blog in ways that respected her responsibilities of anonymity while fostering and scaffolding a relatively personal line of communication about interactions with real people (August 11).

Ms. Frizzle has a limited knowledge of only a sub-portion of the broader community with whom she interacted through her blog. Though she can specifically identify only a small portion of this community, her awareness of the presence and diversity of different groups influenced the professional identity work Ms. Frizzle engaged in as she, for example, offered mentorship to unidentified new teachers or advocated change to unknown readers who might be in positions of power. This finding that an awareness of the existence of a community can impact and support teachers' engagement has implications for supporting teacher learning.

Ms. Frizzle's limited knowledge of the "who" that comprises her blogging community offers an additional advantage for Ms. Frizzle's professional identity work. The anonymity afforded by the blog combined with Ms. Frizzle's commitment to protecting this anonymity offered Ms. Frizzle what Erickson (1968) referred to as a psychological moratorium. In this space, she can try out professional ideas, approaches, and identities in a space with lowered real-world consequences. The blog offered her a distance from her real-world teaching context and her in-person school community.

Demonstrating competence in a variety of professional roles.

Ms. Frizzle's blogging was an activity that allowed her to explore, relate, and demonstrate competence in and across a variety of aspects of her professional identity. Nasir's (2004) study of identity resources available in different activity structures found that basketball was more effective than the mathematics classroom in supporting learning because, in part, it offered participants access to a variety of available roles as well as ways and opportunities to demonstrate competence in these roles. More broadly conceived than roles (i.e. a part a person plays in a social context), a person's identity, including her professional identity, is constituted by the composition of many sub-identities (Mishler, 1999). By "sub-identity" I mean the different identities one takes up in different social situations (Gee, Allen, & Clinton, 2001). These differing sub-identities (such as mom, daughter, professor, wife, friend) are related to one another and impact one another. The alignment of or competition among these sub-identities determine, to a large extent, a person's satisfaction with the current state of affairs. When "who I am as a citizen" aligns with "who I am as a teacher" aligns with "who I am as a daughter or mother," I am more satisfied and content (Mishler, 1999). A blog offered Ms. Frizzle the

opportunity to participate in a variety of roles and thus explore and develop her various sub-identities and the relationships between them in a forum that doesn't privilege one and exclude others (O'Connor, 2001, 2003). Ms. Frizzle used her blog to assume and explore at least four inter-related professional identities: self-as-learner, classroom teacher, mentor, and social justice activist.

With respect to each of these sub-identities, Ms. Frizzle used her blog in 'bidding' efforts to be recognized as a certain kind of accomplished teacher including one who held reform-based pedagogical priorities, successfully advocated for students beyond the classroom, established a unique and influential rapport with colleagues, and was effective in supporting her students' science learning. Evidence of her competence existed in her recounts of past events, display of verbatim student work, and links to other bloggers' inclusion or celebration of her work. Each of these four main sub-identities is now considered.

Self-as-Learner. One consistent sub-identity Ms. Frizzle explored through her blog was what I refer to as "self-as-learner." Ms. Frizzle described the professional implications of a wide range of experience in which she was a learner including such diverse domains as professional development, scientific skills, administrative tasks, and more personal learning. One example of developing her sub-identity as "self-as-learner" is a lengthy post of a search for and exploration of a new yoga class from the perspective of a learner.

What is it like to be a student attending a class for the first time? Yoga classes seem like a particularly good opportunity for me to reflect on being a student, because I am out of my comfort zone. I walk into new academic classes confident and ready to participate, but in a dance class, exercise class, or anything else physical, anxiety kicks in big time. I am pretty sure I'm going to be the last one in the class to learn a new skill.

My head is full of questions on my first visit to a new yoga class.

What is the teacher like? How does she or he relate to students? Will she or he notice me? Does she or he take time to learn my name? Is this class a cult of the teacher? (August 11, 2nd post of 4 for the day).

She continued with a long line of reflective questions, highlighted by the use of a different font color, from the perspective of a learner. She concluded with implications for her teaching:

These are all things I'm noticing, thinking about - during a class where I'm supposed to be focused on my breathing! So I can only imagine the stuff that must be filling my students' heads on the first day of school. One lesson for me is to be careful of first impressions, as my students will be processing so much new information about how to fit into my class...

One example of how Ms Frizzle used her blog to demonstrate competence in this sub-identity can be found in this post about the massing scale she and her colleague constructed in which she used a digital image as well as describing the successful results of her efforts:

[embedded image of the balance] Here's a microbalance I built a few weeks ago. We calibrated it using a square centimeter of paper. We measured the mass of 50 sheets of paper on an electronic balance, then calculated how many square centimeters of paper that was, and divided. In the end, I was able to use my microbalance to measure the mass of a single grain of millet, (August 2).

Developing her sub-identity as a learner was a common theme across Ms. Frizzle's posts throughout the academic year. She used her blog in reflective and introspective ways for this professional work.

Classroom Teacher. One common role Ms Frizzle assumed through the writing of her blog is that of a classroom science teacher recounting the stresses of the day, the detailed planning of a lesson or unit, the strengths and limitations of certain instructional decisions, consistently focusing on her students (their behavior, achievement, happiness, engagement, safety, etc.). Two main aspects of her classroom teaching emerged as being important to this sub-identity: 1) her pedagogical decisions and priorities, and 2) her relationships with her students.

On August 11, Ms. Frizzle used her blog to share her planning process of the Life Sciences Curriculum and represent (and continue) her struggle to determine how much and what content to cover. Using a track-back (link to a previous post), she built this post on the "work she had done in July."

The issue feels political to me. Some teachers would take a look at the list of objectives and cut away - echinoderms! ZAP! mollusks! ZAP! evolution! protists! fungi! ZAP! ZAP! ZAP! In no time at all what would remain would be cells,

plants, birds, mammals, reptiles, amphibians, arthropods, fish, maybe bacteria, some basic ecology, the human body... the gross, controversial, and very small or obscure would disappear... Human history is a long and sordid tale of people overlooking or ignoring those forms of life that we don't happen to like, with disastrous consequences for them and for us. My students have so many misconceptions about bacteria - some of them downright dangerous, given the threat of antibiotics resistance - that I want to give the unicellular buggers a thorough treatment. And evolution, well, I hope I don't have to explain why it's important to teach that (and well)! Also - if I cut the easy-to-cut stuff, and so does the next teacher, and the next - could a student graduate from high school without ever having *heard of* some of these organisms?

OK. It all feels important. But I know enough about teaching to know that the fly-by approach - cover, cover, cover - tends to result in no one knowing much about anything. Better to go in-depth on fewer things. So, what to cut? What to squish? What to find some innovative way to embed or connect so that it gets neither cut nor squished? (August 11, 2004).

Ms Frizzle often used the language of science to describe her work as a science educator in which she is “conducting experiments” as she designed, enacted and evaluated learning experiences grounded in her understanding of her students and pedagogical priorities.

Here's the part that's going to be a lot of work for me, and a bit of an experiment: I will create a packet of activities and resources for each group, including two or three lab activities that will allow each group to really get to know their phylum. (August 11).

She then used this space to report on the findings, so to speak, including the limitations of her study, and concluded with implications for future practice (usually for both herself as well as recommendations to her readership). Ms. Frizzle used her blog space to report on her success or learning as a science teacher by articulating the details of the planning, implementation, results and evaluation of various aspects of her teaching. One example of evidence of success in this sub-identity comes through a post she made in October describing her students' reactions to the standardized high school placement test that occurred over the previous weekend: “The kids came to school today feeling good about the test.” She quotes a student, “Ms Frizzle, you over-prepared us!” (October 25).

A second aspect of her sub-identity as classroom teacher that emerged as significant was the diversity of relationships she identified and explored with respect to “her babies” including advocate, parent, teacher, part of their “village,” and friend.

One of the reasons I love my school is that the first day feels like a homecoming, complete with smiles and some hugs from students and parents, and a really genuine warm feeling upon seeing my babies and how they've changed - and how they're just the same - and sensing their hopefulness about the year ahead, even those who didn't do too well in the past... (Okay - eighth graders are not babies. But sometimes I feel protective of them in that way.) (August 30).

In another post Ms. Frizzle described the ongoing support role she offered students who are not in her current science classes. Here she described her interaction with these students she saw in the halls at parent-teacher conference:

I love playing 'village' to the kids I taught last year, but don't see any more, and to the kids that I teach for only 'minor subject' such as health or PE. I ask them to show me their progress reports. I ooh and ahh over good grades and demand to know what's going when they get poor grades. That's village in, "it takes a village..." (November 17).

Many of Ms. Frizzle's posts throughout the academic year celebrated her students' accomplishments and therefore her impact and competence. One example of such a post is the following:

I saw how far they've come since sixth grade: a long, long way. Their writing is so polished. Sometime in the last two years, they internalized a few things about introductions, conclusions, opening sentences, referring to text... I am so proud of them and of my colleagues who have helped them come so far (September 1).

One theme that emerged when analyzing Ms. Frizzle's posts I called "Rewards." The definition of this code was "references to aspects about her profession that Ms. Frizzle celebrated and which seemed to energize her." The great majority of the phrases coded as "Rewards" centered on her students. A student-centered focus is one defining characteristic of a pedagogically advanced teacher (Fuller, 1969). Ms. Frizzle used the blog to communicate and explore her focus on her students, their perspectives and achievements.

After school, as I walk out of the building. From behind me,
Goodbye, Ms. Frizzle!

I turn, and see one of my sixth graders, a spunky girl who occasionally uses her spunkiness for evil, but is, at her best, cheerful and enthusiastic.

I did your homework already!

That's great! You wrote your whole paper?

The whole thing!

*Wow, I can't wait to read it!**

And I can't.

*Yes, I use a lot of exclamation points in my job. Unfortunately, it doesn't get me any tax breaks. What can you do? (March 14, 2006).

Mentor. Ms Frizzle used her blog to challenge and support other teachers, especially new teachers and science teachers, both locally in her school and in her blogging community at large. She used “positioning” language (O’Connor, 2001, 2003) to include herself with the “we” of returning staff and key school decision-makers and exclude herself from the “they” or “you” of the new teachers. Her posts regularly included access to pedagogical resources with her accompanying critique. The critique included reasons she valued the resource and often how she would use or has used the resource herself in her own classroom. Her mentorship (conducted through as well as reflected on with the blog) aligned with the pedagogical priorities she described for her students’ learning: supporting the community in informed decision making, engaging them in (not protecting them from) the rigor and complexity of issues, and scaffolding them through words of advice as well as detailed steps and images, (See for example, August 11, 2004 titled “What I did with my summer vacation: I planned my curriculum.”). For example, on August 24, as Ms Frizzle detailed the events of her “first, first day” back to school, she interrupted her log to offer this advice:

Note to new teachers: Do a dry run of all the nuts and bolts of your first day of school. Do not try out a new route to work, new alarm clock, or new shoes on the first day. New haircuts should happen at least a week in advance. And never, NEVER test pilot a new thermos on the first day of school.

During the academic year of this study, Ms. Frizzle was assigned two new science teachers to mentor. On August 6 she posted a detailed entry in which she began by describing her new charge as mentor to two science teacher colleagues. She then recalled the details of her experiences as a new teacher with assigned mentors and explored the politics of the mentoring program including the relationship between research and implementation. Using the combination of her experiences and her understanding of the politics and policies, she articulated recommendations to the general field about mentorship, finally defining specific plans for her mentorship of these two new science teachers. Sharing this professional work regarding mentorship simultaneously served to develop her sub-identity as mentor, offer mentorship support to her blogging community, and engage in a larger educational conversation about the appropriate use of this method

for supporting teacher learning. A specific example of her local mentorship that simultaneously serves to support her blogging community can be found in this post:

The other day, as I looked over a first draft of a unit plan given to me by one of the new science teachers, I asked him to think about whether he would introduce concepts first, then do activities to explore them, or reverse the order and allow the students to explore and observe as an introduction to new concepts. I explained that some teachers generally present the ideas first, others let the kids explore first, many use whichever seems most appropriate for the material, and some mix exploration and explanation in still other ways. By reflecting on the possible ways to organize a unit, and making conscious decisions, the teacher takes the material beyond content so that it communicates something to the student about doing science, thinking science, and being a scientist, (August 28).

Ms. Frizzle used her blog in a wide variety of ways to mentor other science teachers in her blogging community including direct comments to them in the midst of other professional work, detailed descriptions and evaluations of pedagogical efforts, and the sharing of resources including access (links to either the resource or more information about the resource) as well as critique.

Social Justice Activist. Ms. Frizzle used her blog to advocate for her urban students. Using the power given in the public nature of the blog, Ms Frizzle posted poems (e.g. “A True Story” described earlier), “rants” (opinionated and passionate position statements) and informative posts on urban issues. She explored and addressed a wide range of urban issues such as under-resourced schools, the diversity of the student population, challenges of classroom management, the importance of exploratory subjects, and the appropriateness of the choice to weight effort over achievement for disadvantaged students. For example, in a post titled, “Lost in Translation” Ms. Frizzle explored the importance as well as challenges of offering the school handbook in Spanish as well as English.

This seems like a civil rights issue to me, so I keep urging my principal to find someone we can pay, so that we can have a system in place and also demand reliability - but of course, finding a translator is easier said than done. The next time I'm in the Columbia neighborhood, I'm going to look at their bulletin boards and see if anyone is advertising services there...Can you imagine being a father who cannot read any of the materials sent home from school?” (August 31).

Another time (March 29), in a post titled “A Case for Richness” she used a position statement to argue for the importance of addressing urban students’ needs by offering

them broadening learning experiences (those that widen their exposure and experiences) as well as bridging learning experiences (those that connect home to school) (Luehmann & Markowitz, in press):

To me, this is just one more example of why teachers need to add rich detail and complexity to the curriculum for all children. Too often, we simplify and stick to the basics, or we try to tailor the curriculum to the children's experience or interests. I think children from disadvantaged backgrounds need MORE richness, if anything, more chances to see new things and learn their names and how to describe them and explain how they work. And while it is always valuable to begin with children's prior knowledge, we have to be careful to keep going from there, to bridge to new knowledge, to give them the opportunity to develop new interests that they didn't have before because they didn't know they COULD be interested in botany or sonnets or....

One example of her success (along with her colleagues at her school) at supporting her students in a discriminatory system was the story of a high school placement system in which her middle school students are required to participate. First, Ms. Frizzle posts “High School Admissions Rant,” a length passionate position statement about the discriminatory nature of the system (October 16). Her students took the exam a week or so later, and on October 25, Ms. Frizzle posts their reaction: “Ms. Frizzle, you over-prepared us!” On December 21, in a post titled “Dear Santa,” Ms. Frizzle asks Santa for her wishes one of which was: “If you have any pull at the Department of Education, get them all into good high schools for me, places where they’ll be cared for and challenged and, in every way, educated.” Finally, the positive results:

Specialized High Schools Results!

We got the results from the Specialized High Schools exam today.

Out of a class of 59 eighth graders, 6 were offered spots in a specialized high school: 1 to Bronx Science, 1 to Stuyvesant, 2 to Brooklyn Tech, 1 to the new High School for American Studies at Lehman College, and 1 more acceptance, I'm not sure to which school.

I think we did pretty well! (February 15).

Using her blog as a podium, Ms. Frizzle used her blog to call attention to and explore issues of social justice. Much like the other professional sub-identities she developed through her blog, she used this medium to both report on her in-person activism as well as engage in this sub-identity. Working within a discriminatory system, Ms. Frizzle used this public and creative tool to develop herself and seek recognition (by self and others) as an agent of change.

Positioning Oneself Centrally within Larger Professional Discourses

Ms. Frizzle's blog is a collection of narratives she composed to wrestle with and make meaning from her diverse personal experiences. Who she is and who she is becoming in relation to those around her are consistent themes throughout the blog. The personal nature of blogging (often and in this case owned and maintained by a single person) offered Ms. Frizzle central positioning in an activity in which she was lead author and lead actor. After receiving what she called "backlash" from readers in the comments for an opinion she posted the day prior, Ms. Frizzle argued for her central positioning with respect to her blog:

I still stand by everything I wrote yesterday. My blog is a place for me to express myself in writing, not a bulletin board where other people can pin flyers. Imagine telling a photographer, "I've got a great picture for you to take - and here it is, will you put your name on it?" Or saying to a poet, "Here's a metaphor I want you to use in your next poem." At that point, no matter how amazing the photograph or apt the metaphor, I think most photographers or poets would decline, (February 18).

However, unlike a diary or teaching journal that shares this personal nature, the public, interactional, and multimedia nature of the blog connected Ms. Frizzle's professional identity work (including the language she chose, the perspective she put forth, the activities she engaged in, and more) to larger Discourses (Gee, 2005). It is not enough that Ms. Frizzle described certain pedagogical priorities with language. To be recognized as a reform-minded urban science educator, her actions, interactions, and values, in addition to her use of language needed to consistently communicate priorities of student-centeredness, active knowledge construction, richness and complexity of science, and the importance of a critical perspective for social justice. The public nature of the blog offered Ms. Frizzle the opportunity to be recognized by herself *and* others as acting, valuing, interacting and using language (also known as participating) in the Discourses of reform-minded urban science education and educational bloggers.

Ms. Frizzle used her blog to enact an identity of urban science teacher blogger. As she wrestled with issues of poverty, discrimination, and her role in social justice, Ms. Frizzle engaged in the Discourses of urban education and activism. As she developed skills, understandings, and priorities of management, planning, pedagogy and content,

she engaged in the Discourse of science teaching. And as she engaged with the activities and issues of blogging, she engaged in the Discourse of blogging. Though these Discourses are not separate and distinct from one another (quite the opposite), it is clear from Ms. Frizzle's identity work that she engaged in recognition work (Gee, 2005) in each of these areas.

As an identity tool, the activity of blogging gave Ms. Frizzle access to an invaluable learning resource of focusing in on *her* activity, perceptions, impact and development in the contexts of professional Discourses she cared about. Composing her "stories" offered her the opportunity to make meaning of her roles in social, cultural and historical Discourses and thus enact her projective professional identity (i.e. be recognized by herself and others as the kind of urban science teacher blogger she wants to be). Ms. Frizzle used her blog to collect and synthesize related sources on an issue, sometimes from a single source including links and direct quotes, other times from a variety of sources including her email, her classroom, her blogging community and external sources she's been exposed to. (Note the centrality of Ms Frizzle's positioning in this list of collections.) Her blog offered her a space to try on and develop herself with respect to issues that were pertinent, pressing, interesting to her at the time. The open and flexible nature of the blog allowed Ms. Frizzle's writing to flow naturally and frequently between inner reflection and outer circumstances.

An example of her central positioning within a larger Discourse of educational blogging is a post in which Ms Frizzle explored her perceptions of a "Free School." She began by explaining that she saw a film documentary about the topic, followed by a link to the theatre, the film, and the school and a direct quote from the Free School's website to offer a more objective description. Following, she offered a disclaimer about her reactions grounded in her personal history. Finally, she explored her reactions to the ideas. An excerpt is offered here:

I'll be honest with you: some of the defensiveness stems from my own deep ambivalence about the purpose of education. I believe in what I do and why and how I am doing it. Another part of me questions all the assumptions on which my ideas of teaching rest. These two ideas lie in tension in my heart, a tension which allows me to question, reflect, and ultimately grow. I don't have any final answers; please don't read this thinking I'm arguing for one way of doing things or another, I am really just thinking out loud.

I can only begin with what I saw.

I saw some really powerful moments. One thing the school does well is to create a community where kids are empowered to resolve their conflicts, make decisions about things larger than themselves, and deal with their emotions (August 8).

As she evaluated the program, she articulated and examined her beliefs and priorities with respect to students and schooling. “More provocative are the school's ideas about how children learn, how to structure a school environment, and what is important for children to get from school.” Her public critique of such a program in which she explicated her rationale in detail and grounded it in her personal biography demonstrated how Ms. Frizzle used her blog to position herself centrally within a larger Discourse.

The connectedness of blogging that results from its location on the Internet gave Ms Frizzle a medium that supported both the receiving and giving of professional support. Ms. Frizzle’s interactions with the larger Discourses were in fact dialogic in that she and the Discourse were simultaneously impacted by each other. She received support through the opportunity to develop her professional identity on an ongoing basis in the context of a community that spanned traditional geographic, ideological, and institutional boundaries. She impacted her Discourses by participating through her work including detailed lesson plans and resources, lessons learned, and pedagogical priorities. In addition, her blog simultaneously offered her access to engage in recognition work (Gee, 2005) as a certain kind of professional in both of her significant professional Discourses (urban science education and educational blogging). One compelling piece of evidence of Ms. Frizzle’s effectiveness in this recognition work within her Discourses is the recent inclusion of “Ms. Frizzle” as a term in the often cited online encyclopedia, “Wikipedia.” Her name is given the definition, “Ms. Frizzle is an anonymous blogger from The Bronx, New York City who writes about teaching, politics and her own life.” (http://en.wikipedia.org/wiki/Ms._Frizzle_%28American_blogger%29 retrieved April 11, 2006).

Discussion

This case of Ms. Frizzle’s blog illuminated the potential of blogs to transcend typical institutional, geographic, and ideological boundaries, giving this urban science teacher access to unique resources for personal professional identity development.

Writing a post that included connections to a wide variety of resources and connections to a wide variety of people and issues with little effort (e.g. technical or human connection-making) beyond the writing offered Ms. Frizzle what Gee (2003) refers to as “amplification of input,” or to say it less formally, a lot of bang for her buck. That said, these benefits did not come without a cost. Using the lens of investment, I will consider cross-cutting themes of the identity resources blogging afforded Ms. Frizzle.

Investment of Blogging

Like the old adage, “You get out of it, what you put into it,” this study showed that Ms. Frizzle benefited in certain ways from her blogging practice due to the type and amounts of energy she invested in the practice. Considerations of what she “put into” blogging alongside what “she got out of it,” as discussed below, illuminates implications for teacher educators or others who want to support teacher learning through blogging.

Time and Effort. Ms. Frizzle blogged many times a week, sometimes many times a day. She regularly committed time to professional reading which she used as fodder for her posts. Gee (2003) argues that deep learning for people is not possible “if they are not willing to commit themselves fully to the learning in terms of time, effort and active engagement” (p.59). Ms. Frizzle’s blog evidenced her commitment to her professional learning and identity development as an urban science teacher. In addition, blogging like that of Ms. Frizzle’s (i.e. work that promotes professional identity development) involves sophisticated skills such as writing, reflection, and argument development. Research has shown these skills to be nontrivial and not necessarily intuitive (Davis, 2006). Blogging gave Ms. Frizzle extensive opportunity, through practice and feedback, to work on her skills as a writer, reflector and arguer. This investment of time and energy was obviously foundational for all other types of investments.

Personal. Blogs have been shown to be successful, in part, because of the idiosyncratic way they reveal the individuality of their authors (Jacobs, 2003). Ms. Frizzle’s blog reflected an investment of deeply personal as well as professional perspectives, priorities, and practices. Publicly sharing and publishing one’s personal claims involves risk-taking by making oneself accessible and vulnerable to other’s judgments and critique. In her review of this manuscript, Ms. Frizzle described a comment in which an anonymous commenter called her pompous and self-serving: “It

can be hard – I choose to put myself out there, for good and bad, but sometimes when the world responds, I can feel defensive or mistreated” (April 9, 2006). The payoff for this investment was the opportunity for Ms. Frizzle to develop many diverse sub-identities (sometimes simultaneously) in ways that were meaningful to her. In this way she could conduct her recognition work (by self and others) across a wide array of domains – ones of her choosing, thus ones that are presumably important to her at any given time.

Intellectual. Using blog affordances to present multiple sides of an issue, pose unresolved questions, construct compelling arguments, and reflect on experiences in which she explored self-as-learner, Ms. Frizzle invested intellectual work in her blog postings. Sometimes the focus of the post, sometimes a byproduct, she used the blog to wrestle with and develop understandings of a wide range of often complex professional issues. The payoffs for this intellectual investment included the development of more informed perspectives and positions as well as the reception of input and support for this work.

Social. Over time, Ms. Frizzle nurtured and developed a unique blogging community of mentees, “real people,” experts, educators, and lurkers. Capitalizing on the wide range of members in her blogging community, Ms. Frizzle used her blog to simultaneously and legitimately participate in her community of practice more peripherally (e.g. readership of her blog by members of the teachers’ union and department of education) as well as more fully (e.g. mentoring of new teacher). She nurtured her blogging community implicitly through rich descriptions of issues and events, as well as explicitly by using “shout-outs,” embedded links, and personally addressed messages. The primary benefits of this attention and nurturing were full participation with, acknowledgement from and impact on communities of educational bloggers. For example, Ms. Frizzle first engaged with “Mildly Melancholy” and “upthedownstaircase” (blogging names) through blogging comments, then through email, followed by in-person meetings. Now they meet regularly in social gatherings with other NYC teacher bloggers. In addition, Ms. Frizzle’s blog is regularly included and praised in the “Carnival of Education,” a weekly, edited and annotated compilation of interesting and provocative work of educational bloggers (See, for example, week 58,

<http://educationwonk.blogspot.com/2006/03/carnival-of-education-week-58.html>

retrieved April 24, 2006).

Ideological. In addition to the development of community, Ms. Frizzle used her blog to integrate theory and practice and thus participate in larger big “C” Conversations. Using others’ blogs, educational websites, and other local and national media as fodder for thought, Ms. Frizzle synthesized and put forward issues and positions she determined to be important, used her experience to contribute to the discussions, and considered implications of these issues for her local classroom and school context. Payoffs for this ideological work includes recognition by herself and others as being informed. An email from Ms. Frizzle describes this benefit:

I am astonishingly up-to-date on education issues as a result of blogging and reading others' blogs. Not necessarily the nitty-gritty of NCLB or whatever, but I do tend to be pretty informed about what is going on out there, and other people whom I know outside of blogging have commented on that (February 12, 2006). In addition, as Ms. Frizzle’ invests in and contributes to these Conversations, she supports the development of collective understanding of the larger community.

Pedagogical. As evidenced in the “tagline,” the subtitle of her blog, the focus of Ms. Frizzle’s blog was her middle school science teaching in the Bronx. Ms. Frizzle detailed her pedagogical thinking, process and final products through her blog. In addition, she described relevant aspects of her local context, the implementation of her pedagogical work, and an evaluation of its effectiveness considering student engagement, exposure, and achievement. Again payoffs for this work include benefits for both Ms. Frizzle as well as the broader community of practice. The blog served to support and document her “experiments in science education.” These blogging practices gave Ms. Frizzle an ongoing space to wrestle with and document her pedagogical work in a way that can support other science teachers, maintain a historical record, and work through challenging pedagogical issues.

Advocate. Related to but more directed than general participation in big “C” Conversations regarding educational issues, Ms. Frizzle blogged to advocate for social justice. Capitalizing on the power afforded by this public space, she used her blog to identify problems, “rant” about unfairness, solicit support and participation, and explicate

her rationale for the ways things ought to be. Using this space that positions herself centrally, Ms. Frizzle used her blog to take a stand and encourage others to do the same.

Though there is considerable overlap across these types of investments, each represents a unique type of professional work Ms. Frizzle engaged in through her blog. This particular combination of efforts may be unique to Ms. Frizzle, but the consideration of the breadth and depth of investments offers the field insight into both what is possible (with respect to types of identity work potential supported by blogs) as well as what is effective (with respect to reaping certain benefits).

Implications for Using Blogging to Support Identity Work

Another teacher blogger wrote, “Now I am pretty new to this whole education blogosphere and I have loved reading some incredible blogs that have given me some great things to think about,” (<http://strausser.blogspot.com/2006/04/reality-check.html> retrieved April 9, 2006). Like Ms. Frizzle, this teacher blogger lists many “Education Blogs that Rock” in her blogroll. Though blogging is being explored by teachers in service professional work, Ms. Frizzle is clearly an exceptionally dedicated teacher and blogger. Given that Ms. Frizzle is atypical compared to most teachers with respect to active engagement in her own professional learning, it is important to explicitly consider how these findings inform the larger teacher development or teacher learning literature/community. In this study, blogging has been shown to offer a teacher and very dedicated blogger unique and valuable access to identity development resources, therefore supporting her identity development, but how might other teachers be supported and/or prepared to engage in such rich professional development?

By considering the benefits Ms. Frizzle experienced in exchange for her investment in her blog, we can identify characteristics of Ms. Frizzle’s blogging practice that likely contributed to her effectiveness in using this tool for professional growth. These characteristics serve to inform those who hope to support teacher learning through the practice of blogging. Characteristics include: 1) freedom to post about a range of topics, in a variety of ways, at times that are meaningful to her; 2) frequent and ongoing posts not limited to professional issues; 3) the importance of reading as well as writing; 4) the integration of multiple voices using quotes, links, and images to develop a position; 5) awareness and acknowledgement of one’s contributions to a broader professional

community; and 6) attention to and development of multiple professional sub-identities. These characteristics give some direction for teacher educators and others wishing to use blogs to support teacher learning and development, however there are many unanswered questions like the one posed by Ms. Frizzle in her reading of this manuscript, “How do you foster truly honest reflectiveness that pushes through the sort of protective denial that people have when they are just barely surviving?” Much more research is needed to understand how blogs offer access to and support for teachers’ identity struggles, especially with respect to the unique needs of beginning science teachers. For example, fieldwork is needed to explore blogging in practice as opposed to simply studying the textual products. This study begins to describe the unique identity affordances of blogs for the science teacher committed to lifelong learning and reform-based practice.

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Appendix A

There's a story that's been sitting in my mind for a couple of years now, something that happened when I was a second-year teacher, in my old school. It's a story that I need to tell, and I've felt for a while that it might make a good poem. So last night, inspired, I guess, I sat down and hammered out a first go at telling this story. Since this is my space to tell these stories, read on.

[A SEPARATE POST]

A True Story

January brought a spate of twelve-year-olds
hiding out in the classroom closet,
like cloudy days or ice storms, the climate
in the sixth grade forecasted:
take shelter among the coat hooks and graffiti.

I stood in the doorway like a sentinel in a strait,
overseeing the turbulent current of the hallway,
knots of students - mundane monsoons
or cyclones spiraling, rising -
my students peeling off, curling into our classroom
in twos and threes, greeting me, or not,
taking science books out, or not,
releasing the last heat of lunchtime.

So Louis, when you blew in,
I left my stance in the doorway for the closet,
I was ready to talk you out
or leave you space in the narrow embrace
of the wooden doors.

Miss Scott -
thirty years a teacher,
rumored Black Panther back in the day -
spiker of teacher's lounge punch,
artist behind our hallway's shrine to Aaliyah -
Miss Scott,
who took an unwanted roomful of 13-year-olds
still in the sixth grade
can't really read
wearing blood-colored beads

and did what with them exactly?

Just as you stepped out of the closet in an act of trust or shame -
Miss Scott thundered into my classroom
and I heard the punch land

though I did not see where
I heard the punch land...

When the moment melted
and the other students went on turning in their own drifting motion
all the words spoken in the minute since she hit you
fell onto my ears like rain against a windowpane, arrested
then gathering speed...

*You picked on her girls.
You're a thug.*

Louis, it was a battle to keep you in school
long enough to taste, if not success,
then progress, two days in a row of science
A battle lost in lunchtime fights
and afternoons on the block.
Your walk was a swagger, you dropped
your pants standing on a desk in my class -
off to the principal again -
but even he felt a soft spot for you, Louis,
fourth-time sixth-grader
whose mother came in once, bloodshot
and so high even a new teacher from a small town could tell -
like hope locked in the emptiness of Pandora's box,
something in you reflected just enough light to make teachers hope.

Here is where I wish I could tell the story that starts
with me telling that woman exactly what I thought:

How dare you? How dare you, how dare you?

Here is where I wish I could tell the story that ends with a breakthrough,
when you read the book on pond life
that you stole from the library as a gift to me,
the story that ends with a little trust,
a chance at seventh grade.

The bell rang.
Miss Scott shouldered off
like a mass of humid air lifting.
I taught 5th period.

Louis, you must have thought I did nothing -
you could not have seen me shut the door to my AP's office,
the only time we ever met like that.
She agreed it was serious.

*Miss Scott has been teaching
in this very same school
more years than you have been alive on this earth...*

we don't want her to lose her license,

do we?

I was the butterfly whose wings
could unleash a crushing storm.

I would back down again, I fear,
sacrifice you to school politics,
to my ability to teach 5 classes a day, all year
across the hall from Miss Scott,
from her allies,
who could turn their students against me,
walk off with my supplies,
hide my keys,
let me know where I stood for taking a stand --
I would back down again, I fear,

but I wonder about you, Louis,
transferred a month later - for once
they gave me time to wish you luck.
I know the tug of the old current is strong,
the clean slate quickly marked upon,
but I hope for you,
when I shelve that old copy of *Pond Life*,
because deep down, you were paying attention,
deep down, you wanted something from your teachers
that we wanted to give.