Abstract

Over the past decade, numerous literacy researchers have investigated the multiple literacies of adolescents. Connecting with adolescents' multiple literacies, including digital texts and high interest print-based texts, holds promise as a way to build bridges to subject area content and academic literacies. Although pre-service content area teachers are required to take a content area literacy course in most US states, little has been written about whether those courses include a focus on multiple literacies or what pre-service teachers understand after learning about multiple literacies. In this study, the author analyzes student work from three semesters of a content area literacy course to find out what the students learned about multiple literacies and how they applied the concept of multiple literacies to developing content area lessons.

Increasingly, state certification regulations for secondary content area teachers require pre-service teachers to take some version of a literacy or reading in the content areas course. By 1994 reading courses were required in 37 states plus the District of Columbia (Romine, McKenna, & Robinson, 1996). This relatively recent focus on preparing pre-service content area teachers to assess and enhance their students' literacies suggests a growing understanding of the importance of literacy to obtaining and communicating content area knowledge. At the same time, there has been increasing focus within the literacy field on multiple literacies, especially those engaged in by adolescents (Hull & Schultz, 2002; O'Brien, 2003; Lankshear & Knobel, 2000). Yet little has been written about how (or whether) teacher educators communicate the concept of multiple literacies and the ways it can be used to engage students in content area classrooms. This study provides a close look at what pre-service teachers understand about multiple literacies after engaging in various assignments related to the concept in the author’s graduate level content area literacy courses.
A starting definition of multiple literacies is "the many and varied ways that people read and write in their lives" (Purcell-Gates, 2002, p. 376). This definition includes a wide variety of print texts (novels, magazines, bus schedules, food containers, etc.) as well as non-print media including music, the visual arts, film, and television. Popular versions of both print (graphic novels, topical magazines) and non-print media (music, DVDs, video games) that are considered "pop culture" (Alvermann, Moon, & Hagood, 1999; Xu, 2005) are subsumed under the broader "multiple literacies" term. Also included are New Literacies (Lankshear & Knobel, 2000), both the chronologically new forms of digital and technology-based literacies (often referred to as Information and Communication Technologies or ICTs) (Leu, Kinzer, Coiro, & Cammack, 2004) and forms only recently investigated by literacy researchers, such as the personally published magazines called "zines" (Lankshear & Knobel, 2000; Guzetti, Campbell, Duke, & Irving, 2003). Internet and email/instant messaging are among the most prevalent research and communication digital literacies, while video gaming stands as one of the most popular entertainment uses of digital literacies (Gee, 2003, 2005).

Beneath the initial impulse to catalog the "what" of multiple literacies lie more complex, and perhaps more useful conceptions. These include valuing multiple forms and uses of literacies (Christensen, 2000), viewing literacies as situated in time, place and culture (Barton & Hamilton, 2000), and understanding literacies as socially constructed (Gee, 1996). Thoroughly grounded in socio-cultural concepts of literacies (Street, 1995), these ideas speak to the possibility of viewing literacies as tools for participating in democracy, promoting social justice (Kellner, 2002), and engaging in globalized economic, information, and social networks (New London Group, 1996).

The concept of multiple literacies is not only about multiple texts or varied text forms. It begins with the multiplicity of cultural identities that are expressed through literacies. Sociolinguists (Street, 2005; Gee, 1996) suggest that literacies are more than a means for sharing information; they are intimately connected with identity, or what Gee calls Discourse. Discourses are identity kits that include not only spoken and written language and other means of symbolic expression, but also aspects of identity like dress, body language, and actions that signal underlying beliefs and values of a community. Implicit in the notion of multiple
literacies is the valuing of literacies across communities, generations and cultures. Exposure to multiple literacies can help adolescents value the literacies of their own communities as well as those of others (Christensen, 2000). It can also help them understand how to tailor their language and literacy styles to interact effectively within varied Discourse communities (Baker, 2002), whether social, cultural or functional (such as academic or work-place settings).

Literacies have always been tied to technologies of symbolic representation, from hieroglyphs scribed on pyramid walls to words printed on paper, to computer-based images and text. The concept of multiple literacies provides a window to look more closely at how literacy forms affect the meaning of the transmitted message. Past changes in technologies related to literacy have led to major cultural shifts (for example, the wide access to written literacies created by the invention of the printing press, as described in Finn, 1999). Attending to multiple literacies can open our eyes to exploring possible social and cultural changes arising from engagement with new literacies. Literacy researchers have begun investigated some aspects of these changes, such as the social networks and gendered identities that are created in online communities developed around special interests like anime’ (Chandler-Olcott & Mahar, 2003). However, there is much more to explore – how video-game playing influences people’s view of the world and their place in it, how social relations are impacted by interacting through digital forms (email, IM, cell phones), or how immersion in a multiplicity of digital stimuli affects people’s mental state and ability to learn.

In order for adolescents to leave school able to partake of “powerful literacies” (Crowther, Hamilton, & Tett, 2001; Finn, 1999) that will allow them to obtain jobs of their choice, exert control over their own lives, and participate in change processes, they must have a solid grounding in digital literacies (Leu, Kinzer, Coiro, & Cammack, 2004). In the current globalized economies, students need to be able to communicate and gather information electronically. But beyond that, they need to be able to negotiate “multiliteracies” in the sense that they need to be able to interpret and critique texts across cultures, media and genre (New London Group, 1996; Kellner, 2002). A multiple literacies focus in secondary school, including engagement in digital literacies and interaction with texts in a wide range of genre and media, can address the need to prepare students for these demands of our current world (Larson, 2005). Focusing pre-service teachers’ attention on multiple literacies potentially opens them up to a new awareness of the out-of-school literacies of their
students, provides ideas for possible bridges to content area concepts, and suggests ways they can prepare students to engage in powerful literacies.

Viewed in this light, the idea of engaging pre-service teachers in constructing an understanding of multiple literacies becomes more than a way of teaching them how to build bridges from students’ lives to academic content (a worthy use in itself). Multiple literacies become a crucial tool pre-service teachers can use in preparing adolescents to participate as citizens, workers and perhaps even change agents in a globalized and diverse world. In addition, the concept of multiple literacies can provide a window for pre-service teachers into some of the complexities of literacy, technology and identity.

The concept of multiple literacies also offers a promising path into the lives and interests of diverse adolescents. Adolescents who appear to be struggling readers and writers, disengaged from academic literacies, may actively engage in multiple literacies outside of school (Hinchman, Alvermann, Boyd, Brezo, & Vacca, 2004; Hull & Schultz, 2001; Lankshear, 1997). Outside of school they choose literacies that are high interest, connected to their activities and social interactions, and accessible to them because of familiar content and engaging formats (Hull & Schultz, 2002; Sheridan-Thomas, Ro, & Bromley, 2004). One way to begin bridging this gap between out-of-school literacies and academic literacies is to engage students in school learning by making connections to their interests (Smith & Wilhelm, 2002), to their prior knowledge (Rogoff, 1990), and to familiar out-of-school text formats (Hull & Schultz, 2002; O’Brien, 2003; Xu, 2005).

Constructivists suggest that students construct knowledge by actively making connections between prior knowledge/experiences and new information (Fosnot, 2005). Pre-service teachers need to understand ways to engage adolescents in making such connections. Being aware of and connecting to students’ multiple literacies can provide one pathway to such engagement. In addition, adolescent students’ multiple literacies can provide sources for prior knowledge connections which pre-service teachers can tap into as they help students construct elaborated understandings of new concepts.

Despite a growing literacy research focus on issues related to adolescents’ multiple literacies, there appear to be few studies that investigate the ways college and university teacher educators have attempted to communicate the broad concept of multiple literacies and its accompanying possibilities for educational practice to pre-service
teachers. An ERIC search focused on multiple literacies turned up six articles related broadly to teacher education, two of which were about pre-service teacher education. These two and other similar studies explore the ways pre-service teachers capitalize on the multiple literacies of students in classrooms where they student-teach (Burant, 1999; Rowsell & Rajaratnam, 2005) or do field work (Hopson, 2005; Richards & Morse, 2002). However, they do not describe how education professors introduced multiple literacies to the pre-service teachers or engaged them in learning how to use multiple literacies as a bridge to academic literacies.

Further searches of literacy journals and recent edited books related to multiple literacies or new literacies resulted in several articles focused on the need to prepare pre-service teachers to use technology to enhance learning (for example Merkley, Schmidt & Allen, 2001). Similar articles were found in online journals related to technology in education, one of which is devoted specifically to familiarizing pre-service teachers with the possible uses of digital literacies and technology in schools (see Bucci & Petrosino, 2004 and Cohen & Tally, 2004). Additional articles described ways digital literacies were used in teacher education courses to create communities of learners (Anderson & Andrea, 1995; Choi & Ho, 2002). Most of these studies focused specifically on new literacies related to digital technologies without discussing how to raise pre-services teachers' awareness of larger issues related to multiple literacies or of the possible uses of other multiple literacies forms. An exception to this pattern is C. Luke (2000), in which the author describes a course on critical media literacy that is "organized around the concept of multiliteracies" (p. 429). Students explore the educational uses of digital media, but always with an eye to underlying questions about access to power and the affect of changing technologies on literacies.

Two studies that document specific teaching practices designed to prepare pre-service teachers to work with diverse learners also focus on issues related to multiple literacies (Clark & Medina, 2000; Xu, 2001). Xu describes how she engages pre-service teachers in an Early Literacy course in a popular culture project and in working closely with a case study student. Xu emphasizes that in order to prepare pre-service teachers to work with diverse students, it is important to assist them to understand multiple literacies and to value and support students' full range of literacy knowledge. In an action research study, Clark & Medina explored what their students learned about the social and multiple nature of literacies through reading and writing narratives focused on literacy. The current
study builds on these studies by describing and analyzing the teaching of the concept of multiple literacies to pre-service teachers in an Adolescence Education program.

**Research Questions**

Analysis of student work focused on five assignments related to multiple literacies (described below) with an eye to exploring the following questions:

1. What understandings about multiple literacies do students construct as they participate in Adolescent Learners and Literacies in the Content Areas?
2. How do students apply their understanding of multiple literacies to working with adolescents and designing content area teaching materials?

**Data Collection and Study Site**

Since this study investigates the outcomes of a course I teach, it is framed as action research. Action research provides educators with a structure within which to examine the results of their teaching and to reflect on the effectiveness of instruction. Systematic data collection and analysis differentiates the action research process from the ongoing informal reflection engaged in by many teachers (Caro-Bruce, 2000). Teachers engaged in action research typically do so with the goal of "acquir[ing] information having practical application to the solution of specific problems related to their work" (Stringer, 2004), and they often use their findings to inform "positive educational changes" (Mills, 2003). This goal matches well with the intent of this study: to discover what students understand after course instruction related to multiple literacies so that I as the instructor can refine instruction, if necessary, to create a better match with desired course outcomes.

As is often the case with action research studies, this study uses as data the natural student products of the course. Data for this study is comprised of written student work from three semesters of Adolescent Learners and Literacy in the Content Area classes. The total student population for the three sections was 64. The course is taught in a small Masters level teacher education program in a state university in the northeastern United States. Students in this program are generally from the
nearby geographic area and are predominantly White, with a mix of rural, suburban, and urban backgrounds. The pre-service teachers in Adolescent Learners and Literacy in the Content Area are in an Adolescence Education program, working toward a Masters of Arts in Teaching (MAT) degree in a secondary content area, usually math, English, one of several sciences, or social studies. Most are coming straight into the program from an undergraduate content degree program. Since Adolescent Literacy and Learners in the Content Areas is one of the first courses in their program sequence, many have taken no other education courses. The course also often includes a small number of already certified teachers enrolled in a Literacy or Special Education Masters program.

The specific data for the study included written student work generated in response to five course assignments related to adolescents’ multiple literacies. These assignments are described below. Although all of the examined products were written, they ranged from quite informal (online discussion forums), through slightly more formal (reflective learning logs), to formal written pieces including a paper on the uses of multiple literacies with a particular student and a content area unit plan. The written products examined were also created by students at many different time points over the duration of the course. The collection of varied types of written pieces at varied times during each of three semesters creates a degree of triangulation (Johnson, 2002) in this study.

Data Analysis

Data was analyzed inductively, looking for categories and patterns (Marshall & Rossman, 1995). I read and reread the student work that comprises the data for this study, with an eye to discovering patterns that appeared across assignments. When I found a “pattern of order that seem[ed] to cut across various aspects of the data” (Shank, 2002, p. 129) I created a theme to describe that pattern. Once I arrived at a theme, I reread student work looking for both confirming evidence and “negative instances” (Marshall & Rossman, 1995, p. 116). I created a set of themes designed to answer my first research question (Merriam, 1998) about what meanings students had constructed related to multiple literacies. A close additional review of students’ mini-units gave me insights into my second question, the degree to which students applied multiple literacies to the design of their content area lessons. All five assignments related to multiple literacies are briefly described below.
Assignments Designed to Raise Awareness of Multiple Literacies

Adolescent Learners and Literacy in the Content Areas begins with a focus on multiple literacies, both because it provides a good entry point for understanding adolescent literacies and because it helps graduate students reconnect with their own and each other’s adolescent literacy experiences. It is also a good way for students to get to know each other and enhances the comfort level of the class. Several assignments and class discussions later in the course are designed to deepen students’ understanding of multiple literacies.

Five major assignments related to multiple literacies are reflected in the course syllabus. These assignments focus on raising students’ awareness of the meaning of multiple literacies, of the varied multiple literacies of current adolescent students, and of the kinds of multiple literacy materials available to content area teachers. Two assignments also ask students to apply what they have learned about multiple literacies to engaging students in school-based literacies and in content area lessons. Each of these five assignments is described below and the syllabus descriptions are included in Appendix A.

Multiple literacies discussion and learning log

On the first night of class, students work in small, cross-subject groups. Students are grouped across content areas for this activity because it provides a better chance for them to interact with students who may have different experiences and preferences from their own. Using a provided set of questions about their own literacies as an adolescent, they engage in discussions and create a web of experiences of all group members. Questions focus on what kinds of literacies they engaged in and valued when they were adolescents, who influenced their views of literacy, and how well their literacies matched with the requirements of academic literacy. On the second night of class students look at all of the webs with an eye to similarities and differences. They then return to their groups and talk about what they have learned about multiple literacies and how this learning might affect the way they will teach their future content area classes. For the next class, students write a Learning Log entry discussing multiple literacies.
Multiple literacies projects

Later in the semester, students are asked to return to the theme of multiple literacies and reflect on specific applications to their work with adolescents and their preparation of content area lessons. Pre-service teachers in this class are required to engage in 35 hours of field work in middle or high school. This field work is coordinated through GEAR UP, a federally grant-funded partnership providing university tutors and mentors to a local high needs urban school district. Pre-service teachers observe classes, assist with group work or individual students in classes, and tutor students during study halls and after-school programs. One field work assignment is to talk with one or more students about their out-of-school literacies. Graduate students are also encouraged to learn as much as they can about adolescents' multiple literacies by listening and observing as they interact with middle and high school students. A model set of questions about adolescents' multiple literacies is provided, but the graduate students are given the leeway to choose which questions to ask and to collect information over time. They then write a paper describing the multiple literacies of one or more adolescents and discussing ways that these literacies could create bridges to academic literacies or to subject area learning.

Blackboard discussion forum on uses of multiple texts

After class discussions about various types of materials that might be used in content area classes (in addition to or as a replacement for a textbook), students are given the option to engage in a web-based discussion forum as a replacement for a Learning Log assignment. A few students choose to write a traditional Learning Log, but most participate in the discussion forum offered through Blackboard. The Blackboard Academic Suite (Blackboard, 2002) is used throughout the course as a way to communicate with students, share class handouts and transcripts of class brainstorming, and collect student work. The Discussion Forum feature of Blackboard allows students and professor to engage in an asynchronous (threaded but not in real time) discussion. One Discussion Forum each semester engages students in detailed discussions about how they would use non-textbook materials in their content area classes. Although the initial Forum topic is posted by the professor, students can start new sub-topics by beginning a new discussion thread. This Forum allows students to build on each other's ideas and share the best of what they have experienced as students, observed in classrooms, and tried out themselves during field work or student teaching placements.
Mini-unit project

The capstone requirement for this course is a mini-unit project that includes creating a unit overview including standards-based outcomes and essential questions, and then designing two literacy enhanced lessons plans that would be part of the unit. Students are asked to include specific elements in their literacy lesson plans. One of these elements is a description of how the lesson makes connections to adolescents’ prior knowledge and/or multiple literacies. The requirement that at least one of the two lessons incorporate a non-textbook information source creates another connection between this assignment and the concept of multiple literacies.

Self-assessment task

At the end of the course, students are asked to choose two course goals and assess their developing understandings of these goals. They discuss which course assignments helped them accomplish understanding of the chosen goals. Since one of the stated course goals deals with multiple literacies (see Goal 1 in course syllabus, Appendix A), students may choose to write about this topic. This assignment is described as a student self-assessment because it gives students an opportunity to reflect on what they learned in the course and which aspects of the course helped them learn. However, it also provides me as the instructor with a great deal of information about what worked or didn’t work in the course that semester.

Findings: Pre-service Teachers Understandings about Multiple Literacies

The graduate students made it clear in their self-assessments that they saw their understandings about multiple literacies as an important outcome of the course. Out of 64 students, 38 (60%) chose to discuss the multiple literacies goal as one of two required in the self-assessment assignment. Three themes emerged from an analysis of the graduate students’ work. These themes represented understandings about multiple literacies that appeared across students, across subject areas, and usually across assignments as well. Figure 1 provides a brief listing of these themes and each is discussed in more detail below.
"Literacy" is more complex than simply reading and writing and more encompassing than the ways reading and writing have traditionally been used in schools.

Many of these pre-service teachers came to the class with an understanding of literacy as a simple, skills-based concept. You could either read and write, or you could not. Students responded to the initial class discussions about their own literacies by showing some amazement that the concept of "literacies" includes a variety of ways of interacting with texts that go beyond simply reading and writing words. They were interested to discover that listening to music, watching television, and surfing the Internet are also considered literacies. This realization was clearly expressed by a pre-service math teacher:

When I first walked into the classroom, I had a definition of literacy in my mind. That definition involved only the notion of words; if you could read words you were literate, if you couldn't, you were not. The term literacy quickly expanded for me.

On the first night of class, small group discussions that started with textbook and other school reading assignments branched out to include a wide variety of other literacies, leading to a beginning awareness that these pre-service teachers had engaged in more literacy as adolescents than they initially thought. A pre-service English teacher noted that:
In our group discussion about literacy as an adolescent, we talked about how we all grew up with different experiences with literacy. Everyone in the group agreed that we were more involved with literacy than we thought. We also agreed that we were not interested in reading and writing in the classroom unless it was on a topic of interest. As adolescents, literacy was more interest based. We read and wanted to learn what was interesting to us at the time.

Assignments from later in each semester suggest that students' definition of multiple literacies continued to broaden, in some cases coming to include not only a range of out-of-school literacies and digital literacies, but also varied learning styles, multiple intelligences, and diverse cultural backgrounds. This broad definition seems to be a stretch from a more specific definition of multiple literacies that focuses on the ways people interact with texts (however varied). Nonetheless, it derives from a similar understanding of literacy as socio-cultural, impacted by factors both within the student (learning style/multiple intelligences) and outside of the student, in her/his family and community (cultural influences).

Adolescents have diverse literacies and interests, which may or may not match well with school based or “academic” literacies.

Students started thinking about the range of possible adolescent literacies by remembering their own interactions with literacies when they were adolescents and discussing these memories in small cross-content groups of their classmates. In their learning log reflections written after these small group discussions, students noted that there were both similarities and differences among the literacies of their classmates. A math student expressed what many other students also noted, that the differences had to do with the kinds of literacies students in this course enjoyed when they were adolescents:

I learned that everyone can have very different backgrounds in literacy. My group had very diverse interactions with literacy as adolescents. Our experiences ranged from writing cartoons and poetry to reading music and literature. One of the guys in my group read only
technical publications outside of assigned works. One of the girls in my group said that she tended to read anything and everything she could get her hands on as an adolescent. One person in the group hated to read and avoided any type of reading that he could.

One similarity commented upon by many graduate students was the degree to which as adolescents they tended to dislike school literacies and required school reading/writing tasks, despite engaging in a range of enjoyable out of school literacies. Some students mentioned surprise at the number of students in this graduate level education course who felt that in high school there was a mismatch between their personal literacies and academic literacy. Webs of the initial class discussions suggest that although the majority of students felt that there was a reasonably good match between their own literacies and school literacies, many groups had at least one and some as many as three out of five students who felt that there was a mismatch. Even among those students who said there was a match, several stated reservations about school literacies being confining and restricting, not allowing enough choices, and not providing opportunity for creative writing.

As the graduate students began working with adolescents in their GEAR UP field work placements, they encountered the multiple literacies of current adolescents. They began to realize that not only are these literacies different from what was popular five or more years ago during their own adolescence (the literacies with which many had reconnected during earlier class discussions), but that there are also a wide range of literacy interests among the adolescents with whom they interact. A pre-service math teacher described what he was learning through observing adolescents.

> By watching students through GEAR UP, it was easy to see that students can relate to knowledge better if you relate the information to one of their multiple literacies. Video games, computers, magazines, newspapers, and cell phones fit into their personal literacies. When you make that connection the schoolwork becomes more relevant and it allows the students to more easily stay engaged with the work. By observing students, one could pick up more of the connections teachers and tutors can make.
The idea that there may be a mismatch between an adolescent’s multiple literacies and the demands of school, noted earlier in class discussions with each other, was reinforced by field work with adolescents. These pre-service teachers began interacting with adolescents who had engaged in a variety of literacies outside of school, yet struggled with academic literacies. A pre-service English teacher wrote about the out-of-school literacies of a struggling middle school student. After mentioning that this student spent a great deal of time instant-messaging with friends, the English teacher noted that:

I finally struck a nerve when I asked what types of writing [she] does outside of school. She opened a notebook and let me read some poetry she had written. Her writing was excellent, but extremely dark. I was a bit taken aback by the darkness of her writing but caught myself before I gave a response that could be construed as criticism. I commended her for the richness of her poetry and encouraged her to keep writing.

This pre-service teacher was beginning to realize that a teacher’s reaction to students’ multiple literacies could be decisive in whether the student saw those literacies as valid in a school environment or marginalized and separated from school.

**Adolescents’ multiple literacies can provide bridges to engaging students in content learning and academic literacies. These bridges can be based on high interest topics and the engaging and accessible formats of multiple texts.**

The multiple literacies project asked students to write about how they would use the multiple literacies of a specific student to help that student connect with content area information. Answers to this question were thoughtful and varied. Suggestions included explicitly connecting adolescents’ interests to subject area material, encouraging adolescents’ reading of any kind as a way of improving overall reading, creating study formats that matched out of school literacies, and shifting teacher stance in relation to adolescent literacies.
Some students, such as the following math student, suggested making direct connections between adolescents’ interests and current content area topics:

Tutoring today at [middle school GEAR UP placement], I was able to connect geometry to an activity that two students love – skateboarding. We talked about building ramps and half-pipes, and how knowing the surface areas of different shapes, for example, was essential for knowing how much material to buy.

Several students wrote about ways of using adolescents’ multiple literacies as a format for studying school information. These students saw the possibilities for creating student engagement through accessible formats, such as music, game formats and poetry, even when the content was not in the student’s interest area. The following is one such example related by a pre-service biology teacher:

The student that I worked with really enjoyed dancing, hip-hop, rap music, and writing poetry. She liked to choreograph dances and make up her own lyrics. I asked her if she could write a poem about her biology. The next day the student brought in a poem that she had written about DNA replication. The following session that I had with this student was very interesting. She came up with some music and rapped her poem to me. It was all the information that she needed to know and she could draw out pictures while she was rapping her song. The student informed me that she was able to remember all the information for the next test because of that song. She said, ‘It was the most fun I’ve ever had taking a test. I just jammed out and bounced my head through the whole thing’.

These pre-service teachers saw the use of multiple texts as another way to bridge adolescents’ multiple literacies into the classroom and increase students’ interest and engagement. From initial small group literacy discussions as well as their interactions with adolescents through the GEAR UP tutoring program, pre-service teachers came to the realization that many adolescents found textbook reading to be boring,
intimidating, and difficult to understand. The use of multiple texts has been suggested as an important aspect of supporting adolescents’ multiple literacies and creating content area classroom environments where texts are accessible and interesting to students (Walker & Bean, 2005). The course textbook (Vacca & Vacca, 2005) contained suggestions for using trade books and other multiple text materials to teach content. Class activities and discussions also highlighted different text genre and formats that might be used.

Blackboard Discussion Forums allowed students to share their ideas about using multiple texts to teach in their content areas. In the Forums students suggested the use of a wide range of materials, including trade books, magazines, newspapers, store advertisements, music, poetry, TV shows, DVDs/videos, and artwork. Internet uses mentioned included research, educational games, and sites that provided visuals to enhance student understanding of abstract concepts. Most materials were discussed across content areas (for instance, trade books, Internet use, and TV/video/films were mentioned by future teachers of English, social studies, science, and Spanish). Future math teachers, however, tended to focus on different types of materials, ones that are more math-specific. These included math manipulatives, computer games and puzzles, calculators, and connections to real-life uses like shopping and building things.

Many of the pre-service teachers noted the potential for use of multiple literacies to interest and motivate students who might otherwise think a particular topic was uninteresting and irrelevant to their lives. A pre-service chemistry teacher responded to a classmate’s idea of having students read chemistry-related trade books by suggesting that she could

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\text{... show students several clips of the most interesting scientific moments from a CSI episode, then ask them to choose a scientific technique that most interested them and do research on it. That may give them the necessary focus while still being interesting and allowing them choice.}
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Suggestions for use of multiple texts often started with varied print-based texts (trade books, magazines, newspapers) and branched out into Internet sites and other use of visual texts like film and TV. These graduate students were aware of the motivational force of using currently
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popular media texts, as reflected in the comment of a pre-service English teacher:

*I couldn't just go and pluck up a literacy strategy that I hoped would appeal to all students' interests; it doesn't work that way. An overwhelming majority of the kids I talked to led me to the conclusion that popular media was everything to them.*

Their beginning awareness of multiple intelligences also led them to believe it was important to incorporate auditory and visual texts as well as print-based trade books and magazines.

**Findings: How Do Students Apply their Understanding of Multiple Literacies?**

Professional development studies have shown that in-service workshops focused on lectures and group activities raise awareness of instructional innovations, but do not necessarily give teachers enough information to use new techniques in practice, much less use them with any intentionality. Teachers need to design lessons, teach lessons, and reflect on the outcomes of those lessons before they can begin to apply new educational concepts or methods effectively and thoughtfully, making choices based on complex factors that include classroom context and desired outcomes (Guskey, 1999). It therefore comes as no surprise that pre-service teachers in this class could explain the concept of multiple literacies orally and in writing, yet they had difficulty writing explicitly about how they used multiple literacies in their mini-units.

Students were able to articulate their understanding of multiple literacies clearly in their Self-Assessment papers at the end of the course. Nonetheless, the Mini-Unit projects, also completed near the end of the course, often reflected a more diffuse and less coherent understanding of multiple literacies. Students' explanations of how they used multiple literacies in their lessons often included references to learning styles or modalities instead of the more expected elements of multiple literacies such as connections to students' out of school literacies, multiple texts and media formats, or connections to digital literacies. One pre-service social studies teacher, for example, noted that, "Audio/visual, written, and verbal forms of communication are offered in this lesson in order to appeal to the wide variety of student literacies in the classroom."
On the other hand, mini-unit lesson plans often included uses of multiple literacies that were not specifically labeled by the students as "multiple literacies." Students included Internet shopping, currently popular movies, rap and other popular music, newspapers, and menus in their mini-lessons even though they did not discuss these as multiple literacies connections. This use of multiple literacies formats and topics is good news in the sense that students appear to have intuitively grasped the idea of connecting to adolescents' varied literacies as a way of generating student interest. It is nonetheless problematic in that lack of intentionality may limit the degree to which pre-service teachers will be able to use multiple literacies strategically and thoughtfully in designing and delivering lessons. These pre-service teachers did not necessarily know when they were using multiple literacies and could not explain exactly why, so if it was hard to tell if they were using the approach in the most effective ways to reach their chosen instructional outcomes. In addition, only a small number of students used multiple literacies in their Mini-Unit in pursuit of more complex outcomes like engagement in critical literacies.

Implications

This study has provided insights into what understandings about multiple literacies pre-service teachers constructed while taking a graduate level literacy in the content areas course, and how they applied these understandings to content area lesson design. While the study was framed as action research and designed to enhance my teaching, the following implications may be useful to others who teach similar content area literacy courses to secondary level pre-service teachers.

1. Focusing on multiple literacies early in the course, with connections to graduate students' own adolescent literacies, appeared to open up a mindset/perspective that carried through the rest of the course.

Many of the pre-service teachers in this course felt that initial class discussions of multiple literacies provided a new way of looking at literacies. This new lens enabled them to observe a broader spectrum of literacies in their fieldwork with adolescents and to think about diverse ways to approach the teaching of their own content. Analyzing student work for this study reinforced the usefulness of engaging students in multiple literacies discussions early in the course, not just as an ice-breaker, but as a way of framing what the rest of the course is about.
Graduate students’ comments also reinforced the importance and power of helping pre-service teachers make connections from the inside out – from their own lives and literacy experiences (similar to Xu’s, 2001, pre-service teacher literacy autobiography assignment), to the literacy experiences of their demographically similar classmates, then out to the literacies and lives of diverse urban adolescents.

2. *Pre-service teachers understanding of multiple literacies is strengthened by interaction with current adolescents.*

While discussing the kinds of literacies they engaged in as adolescents was a good starting place, it cannot replace working with and talking to current adolescents. Pre-service teachers in this course made it clear that one of the best ways to learn about adolescent multiple literacies is to talk to adolescents. This mirrors the recent focus in the literacy field on attending to adolescent voices and perspectives (Alvermann, Hinchman, Moore, Phelps, Waff, & Stolle, 2006; Moje, 2002). Students noted that their GEAR UP field work experience gave them the opportunity to talk to, listen to, and observe adolescents. Nearly all pre-service teacher education programs include a substantial field work component prior to student teaching, and this field work can provide fertile ground for learning about multiple literacies if students are primed to look for and think about multiple literacies as they work with adolescents.

3. *Modeling of multiple literacies practices in teaching the course may help pre-service teachers move from awareness to application.*

Graduates students’ facile and focused discussions of multiple literacies as a concept contrasted with their diffuse applications of the concept in lesson planning. This suggests that many did not have a clear sense of how to design lessons that taught content and engaged students in multiple literacies. Modeling content literacy strategies with pre-service teachers is one way I familiarize them with how and why the strategies can be used. Anticipation guides and KWL are used to elicit prior knowledge connections to upcoming topics, classes include cooperative learning activities and literacy circles to promote active learning, and varied writing tasks encourage synthesis and reflection.

But I have rarely modeled the thoughtful use of multiple literacies to promote engagement, connections to prior knowledge, and exposure to multiple perspectives. Materials for the class are 100% print based, nearly all academic non-fiction text, and only a small percentage involve digital
literacies (e.g. Blackboard Discussion Forums and an instructional web site evaluation). I now realize that I need to model the use of multiple literacies by using varied media and materials, making connections to pre-service teachers’ literacy interests, and providing multiple perspectives on important course topics. This means developing more than a passing knowledge of students’ diverse interests and it also means working around the limitations of available technologies in campus classrooms. It means doing myself what I ask my students to go out and do in their future public school classrooms.

4. Providing numerous opportunities for pre-service teachers to create, deliver, and reflect on lessons that include multiple literacies connections will probably improve their ability to apply multiple literacies to their own teaching.

Pre-service teachers in this course were asked to describe how they would use multiple literacies as a bridge to academic literacies in one course assignment (multiple literacies project) and were later asked to include multiple literacies connections in their final unit plan literacy lessons. While most described creative and interesting ways to make multiple literacies connections in their multiple literacies projects, a much smaller number were able to build thoughtful engagement in multiple literacies into their lesson plans. This suggests that they need more encouragement and opportunity to create lesson plans with multiple literacies connections. Students are asked to create literacy strategy guides and mini-lessons at several points throughout the semester. But they have not been asked to include multiple literacies until the final Mini-Unit project. In future classes students will be asked to make connections to adolescents’ multiple literacies several times over the semester as they create practice materials.

Conclusion/Multiple Literacies Revisited

I began this study focused on learning about the varied understandings of multiple literacies constructed by pre-service teachers in “Adolescent Learners and Literacy in the Content Area” classes. I did learn a great deal about what my students understood about multiple literacies. Much of what they learned matched what I thought I was teaching. The pre-service teachers in this course understood that adolescents engage in a variety of literacies, many of which happen
outside of school. They learned that these literacies can possibly be used as bridges to help adolescents learn academic content and make connections between new and known information. Some of them saw the possibilities for connecting multiple literacies and critical literacies.

One surprise was the degree to which many students viewed the initial and ongoing discussions of multiple literacies as a lens through which to view the rest of the course. What these graduate students learned was bigger, and possibly more important than what I thought I was teaching. It was also far less clear cut. I thought I was teaching the specific idea that adolescents engage in literacies outside of school (and in unsanctioned literacies inside of school) and that these rich multiple literacies might be used as bridges to enhance academic literacies. Many of the pre-service teachers in this course seemed to view multiple literacies more as an overarching philosophy than as a roadmap to a set of instructional strategies.

Perhaps this should not have come as a surprise, as it appears that in some ways I have used the term “multiple literacies” as a shorthand for my own literacy philosophy – that literacies are varied, situated, and socially constructed (Barton & Hamilton, 2000; Gee, 1996). This finding did suggest to me that I could provide an even more powerful and coherent “lens” for students by explicitly sharing my understanding of literacies as socially constructed and helping them place the concept of multiple literacies within a socio-cultural theoretical framework. I can also encourage my students to explore the connections between literacies and identity, especially as it relates to cultural identity and possible mismatches between home and school language/culture (Nieto, 1999; Purcell-Gates, 1995). Discussions about the impact of engagement in multiple literacies on adolescent identity formation might also be useful.

In addition, I noted that only a few students made a direct connection between multiple literacies and critical literacies (A. Luke, 2000). Students currently engage in course assignments related to both multiple literacies (those described above) and powerful literacies (reading and discussion of Finn’s 1999 Literacy with an Attitude). However, I do not directly teach about critical literacies. There is also no clear connection made in the course between multiple literacies, critical literacies and powerful literacies. Engagement in and valuing of multiple literacies is one pathway to critical literacies, and critical literacies are essential to the development of powerful literacy. I now realize that I need to provide more resources related to critical literacies to create opportunities for students to make these connections in class discussions.
I had a hunch, unsubstantiated until I analyzed the data for this study, that students could talk/write about multiple literacies more coherently than they could apply the concept to the development of content area literacy lessons. Analyzing student work confirmed this hunch and led me to rethink both the need to model multiple literacies in teaching Adolescent Learners and Literacy in the Content Areas and the need to provide more opportunities for these pre-service teachers to practice developing lesson plans that integrate multiple literacies.

There are issues of both a theoretical and practical nature that did not arise in this investigation, largely because the graduate students were pre-service teachers without the perspective of a classroom teacher. Practicing teachers with whom I have worked on multiple literacy projects raise concerns about how to deal with multiple literacies materials that may seem inappropriate for school contexts and echo researchers concerns about how to interact with adolescents around their multiple literacies without co-opting them or making them into something schoolish (Lankshear & Knobel, 2000). They also express frustration at always being one step behind the adolescents they teach as multiple literacies topics and forms change at a dizzying pace. These are questions that merit further research in actual school contexts as well as at least beginning discussions with the pre-service teachers in Adolescent Learners and Literacy in the Content Areas.

Because this is a qualitative action research study, designed to help me improve the teaching of my own content area literacy course, I make no claims to generalizability. Nonetheless, I believe that other literacy educators teaching similar content area courses may find something useful in the results – either in the information about what students understood about multiple literacies or how they applied their understandings (or did not apply them) to content area lesson design. As we strive to communicate to pre-service teachers ideas about literacies and learning that are important to us, it’s good to remember to step back once in awhile to take a close look at how students are making sense of what we teach.
References


Appendix A

Excerpts from Course Syllabus

LTRC 519: Adolescent Learners and Literacy in the Content Areas

COURSE GOALS:

1. Students will become aware of the multiple literacies of adolescents and discover how much can be learned from careful observation adolescent learners. Students will also become aware of how student diversity (cultural, linguistic, learning styles) affects literacy and learning, and how teachers can respond positively to this diversity.

2. Students will learn about and observe the kinds of literacy tasks used in content area classrooms.

3. Students will learn how to create materials to assist students with classroom literacy tasks. They will also learn how these materials can be embedded in content area lessons and units.

4. Students will learn how to evaluate print-based and web-based content area materials and how to assess student literacy abilities and knowledge levels.

5. Students will be reflective learners, aware of the connections they are making across class tasks and materials and between course learnings and their own knowledge and experiences.

COURSE ASSIGNMENTS

Field Work:
This course requires a 35 hour field placement for MAT students. That placement is actually in two parts: 30 hours of working with a student and 5 hours of classroom observation. You will be placed as a GEAR UP tutor at one of the two local middle schools. GEAR UP Coordinators will choose the placement based on need. You may be working in a classroom, with students during study halls, or in one of the after school academic assistance programs. By working in a [name deleted] school you will be satisfying the requirement that some of your internship experience must be in a high needs school. GEAR UP will keep a record of your field work hours (you will sign in each time you work) but you should maintain a Field Work Log.
Observing and Interacting with Students:

The goal of the hours you spend working with students is to give you a chance to work closely with adolescent learners. As you interact with various learners, you should attend to their use of multiple literacies, their interests that could be used to motivate and enhance learning, and the strategies students are using to learn and to accomplish academic work.

* You will engage in a project designed to increase your understanding of the multiple literacies of the students with whom you are working. There are several options for this project. Note that all of them start with talking to students about their multiple literacies and informing yourself. What you do with that information differs in the various projects.

  Talk with one or more students you are tutoring about their interests outside of school. Find out what they read and write outside of school, how they use computers, and anything else that is a big interest for them (music, sports, etc).

  **Choice 1:** Then write a two page paper on how you could use these students' interests to promote an increase in their literacy skills that could translate into improved academic achievement.

  **Choice 2:** Then write a two page paper on how the kinds of literacies and interests these students expressed could be integrated into your teaching of your subject area. How could you use these interests to create a bridge between your students and your content?

  **Choice 3:** Then design a lesson to present during an after-school program (Diversity Café or Passport to Success) that would engage students in their multiple literacy interests AND teach them a useful literacy strategy that they might transfer to their academic literacy learning. If you can actually teach this lesson you can get up to 5 bonus points, but you can choose this option even if you are not able to actually present your lesson.

  **Choice 4:** Then create a “matched set” of materials for instruction in your subject area that connects a high interest material to a subject area material (for instance, connecting song lyrics to a speech made by a historical figure, connecting a movie to a book, or connecting a video game to a topically related text). Write a 2 page summary of how you would use these materials together to teach a lesson.
Content Area Mini – Unit

You will develop a “mini-unit” showing how you would embed content area literacy strategies into your content area. You may choose to work with up to two other students on this assignment. If the students you choose to work with are from different subject areas you may develop an interdisciplinary unit. You will develop unit outcomes and essential questions. You will then create two different content area literacy lesson plans. You will share your lesson plans in class using a peer review process. Complete details of this assignment will be provided in class.

Learning Log/Discussion Forum:

You will write four learning log entries of about two pages each. This reflective writing is designed to help you make and think through connections. While at least some part of each learning log must be in narrative form, you are encouraged to use visual representations (concept maps, charts, webs) to show some of the connections you are making. A few of the learning log entries will have assigned topics. Possible topics for choice entries will be provided on the first night of class. Try to write on a variety of topics over the timeframe of the class. Learning Log entries will be graded for their thoughtfulness, the degree to which connections are made between various sources of information (textbook, lectures, class activities, prior experience, field work experience, etc.) and the specificity of evidence used to elaborate upon those connections. It is important to use specific details from your experiences and/or references to class texts and discussions in your Learning Logs. They are not designed to be “stream of consciousness” type writing, but rather to provide an exploratory outlet for your thoughts and reflections. At least one Learning Log entry will be replaced with an option to participate in an online Blackboard Forum discussion.

Self Assessment Task:

In two or three double spaced pages, discuss how completion of class assignments provides evidence of your learning in relation to each of TWO course goals (there are five goals listed earlier in this syllabus). In writing, walk me through the details of how the evidence shows that you have accomplished each of the two goals.