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Of Independent Liberal Arts Colleges
Of Teacher Education**

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A Model for Developing Pre-Service Teacher Reflection: An Interactive Intervention Strategy

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Abstract

The author describes an interactive intervention strategy to assist pre-service teachers in developing reflective practices in an undergraduate literacy course. The goal of the study was to encourage deeper analysis rather than purely descriptive summaries of field placements in teacher candidates' written reflections, so pre-service teachers may begin thinking critically about their role as future teachers. The results revealed that with guidance and interactive intervention strategies, teacher candidates were able to move from merely descriptive summaries of their teaching experiences to a deeper analysis of literacy issues and potential solutions of teaching situations in their written reflections.

Among the many goals teacher educators have for pre-service teachers is that which involves developing reflective thinking about one's beliefs and teaching decisions. It is through the process of reflection that teachers can gain knowledge of their behavior and make deliberate decisions and changes. Schon (1983; 1987) believed that teaching could be improved if practitioners were encouraged to reflect more upon

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their actions, rather than relying on the knowledge imposed by others. More recently, Johnson, Musial, Hall, Gollnick and Dupuis (2008) agreed, stating, “Reflection is one of the important characteristics of successful teachers. Professionals who reflect on and analyze their own teaching are involved in a process that is critical to improving as an educator” (p. 5). While the importance of reflection is arguably established, “there is no consensus in the field as to the definition of the best method of developing these abilities” (Bowman, Galvez-Martin and Morrison, 2005, p. 337). In fact, the research on assisting teachers to become reflective practitioners is limited. In one case, Troyer (1988) discovered that training in reflecting makes a difference in pre-service teachers’ knowledge of what it means to be reflective and in their ability to reflect in a more critical manner about their teaching experiences. The current study was developed to add to the limited body of knowledge about supporting reflective practice among future teachers.

In my experience with pre-service teachers, when asking individuals to reflect on their classroom experiences, I found that students’ reflections were often brief, vague and descriptive in nature rather than indicative of deep thinking and analysis. My intent through this study was to implement an interactive intervention that would raise pre-service teachers’ awareness of what it means to be a reflective practitioner, thus encouraging critical thinking and problem solving—skills necessary in the daily activities of teachers. Through various interactive measures, the goals of this study were twofold: (a) To encourage pre-service teachers to become more aware of what it means to be a reflective practitioner, and (b) to encourage pre-service teachers to move from merely descriptive summaries of their field experiences to a deeper analysis of educational issues and hypothetical solutions of such topics in their written reflections.

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Theoretical Framework

Three theories guided this study: reflective practice, sociocultural and constructivist. Taken individually, each theory provides a strong background for this study; taken collectively, the theories complement one another to enhance the study design and analysis of findings. Theories of reflective practice can be traced back to the work of Dewey's (1933) contributions promoting thoughtful action by teachers. More recently, Schon (1983; 1987) proposed two types of reflection in which practitioners engage: *reflection-in-action* and *reflection-on-action*. This study focused exclusively on reflection-on-action because the participants were pre-service teachers who were primarily observing in the classroom, rather than engaging in the act of teaching. Reflection-on-action can occur either before or after an action. Due to the study design, the latter is the main focus of reflecting for the participants in this study. In many cases, the participants were reflecting on the actions of the cooperating teacher they were observing, as well as on the actions and reactions of the students in the classroom.

Drawing from a sociocultural perspective (Vygotsky, 1978), social experiences shape the ways of thinking and interpreting the world. Pre-service teachers construct their beliefs and values through their lived, personal experiences. Considering Schon's (1983; 1987) reflection-on-action, we can surmise that the task of reflecting on the action of others contributes to pre-service teachers' construction of knowledge and making sense of experiences. Coexisting with sociocultural views are constructivist theories which propose that learning tasks should be authentic and student-centered and involve critical thinking and problem solving (Brooks & Brooks, 1999; Flynn, Mesibov, Vermette, & Smith, 2004; Phye, 1997). For pre-service teachers, this involves focusing on what is learned through their field placements rather than relying solely on what is taught in their university classrooms.

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Thus, this study engaged pre-service teachers in the internal cognitive activity (Piaget, 1952) of reflection about their authentic experiences in classrooms.

Methodology

This qualitative study was conducted in an undergraduate Birth to Grade Six Language Arts course at a small liberal arts university. As part of the educational program at the university, education degree students were required to partake in field placements each semester. Pre-service teachers attended a local elementary school classroom to gain experience working with children in “real” classroom settings, observing their cooperating teacher and interacting with students. Placements were arranged through a campus office which acted as a liaison between the university and local communities. The majority of participants were placed in high-needs schools in a local urban district, consistent with the mission of the university and the goals of the education department. The remaining participants attended either suburban or rural schools. Cooperating teachers were selected based on their willingness to support a pre-service teacher and represented a variety of teaching experiences and grade levels.

Participants

Twenty elementary education majors participated in this study. The majority of students were juniors in college, with the remainder in their sophomore year. Participants had previously taken at least three education courses, all of which involved a course-embedded element of “reflection,” so each had various experiences with reflection and reflective practice. All participants were Caucasian; three male and seventeen female. The participants were primarily from middle class, suburban backgrounds and did not attend high needs, urban

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schools as elementary students. Therefore, a placement in a school that differed from their own personal experiences provided a rich, thought-provoking opportunity.

Research Design

In order to examine the effects of intervention strategies on pre-service teachers' understanding of reflective practice, duplicate data measures were collected before and after intervention strategies were conducted. Pre-assessments were administered to determine a baseline for understanding participants' conceptions of reflection and reflective practice. Subsequently, intervention strategies were implemented over a four-week period of time in an attempt to increase pre-service teachers' understanding of reflective practice. Finally, post-assessments were administered to determine if any changes occurred in participants' understanding of reflective practices.

Pre- and Post-Assessments

Data sources included student-created definitions and written reflections related to field placements. Prior to intervention, participants were asked to complete a handout with definitions and also submit a written reflection about their Learn and Serve experiences. After intervention procedures were conducted, students were asked to write a second written reflection about Learn and Serve. On the day the second responses were collected, the post-assessment definitions were completed in class.

Definitions. Students were instructed to describe their thoughts about "reflection" and "reflective practice." Pre-assessment responses were written on a handout which included the following prompt: "What do these terms mean to you as they relate to teaching?" The post-assessment directions were altered slightly to encourage participants to respond from a personal perspective: "What do the following

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terms mean as they relate to you as a teacher?” It is unlikely that this minor change in wording may have affected the results. However, participants often responded in the third person in the pre-assessment (i.e., “Reflection is when *someone...*”) and the first person in the post-assessment (i.e., “Reflection means *I* will...”). Pre- and post-measures were completed and collected in person during class time.

Written reflections. Students were asked to write two reflections about their Learn and Serve experiences. The first response was written and collected prior to any intervention procedures, and the second reflection was written and collected after all intervention procedures were complete. Students wrote their reflections outside of class time. The first reflection was submitted electronically as a word document, and the second was submitted in person in hard copy. The directions were the same for both assignments:

Write a reflection about your Learn and Serve experience. Focus on one or two aspects of literacy instruction. Your response should be approximately 2 pages, double-spaced.

The above guidelines were specific for several reasons. First, I wanted pre-service teachers to focus on just one or two aspects of their experience, rather than feel like they had to give a “play by play” description of an entire day of observation. Specifically, literacy was to be the focus of the response, as the study took place as part of a language arts course. The two-page guideline was chosen to provide a framework for my expectations.

Intervention

Three interactive intervention steps occurred: (a) The presentation of information about levels of reflection (Jay & Johnson, 2002; Galvez, 1995); (b) self-evaluation of written

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reflections; and (c) “guided reflection” feedback (Reiman, 1999) on written reflections.

Step 1 - Presentation of levels of reflections. Students were taught about the levels of reflection during a 30-minute lesson. A handout served as a reference about the typology of reflective practice (Jay & Johnson, 2002) and levels of reflection (Galvez, 1995). Jay and Johnson (2002) describe the differences between descriptive, comparative and critical reflection. Galvez (1995) presents eight levels of reflection ranging from evidence based on feelings, to retelling, to analyzing, to evaluating.

As a whole group, we discussed what the various levels referred to in regards to reflecting on teaching. For example, Galvez’s level zero — “No mention of pedagogical concepts or skills. Comments based on self or feelings” — was described by one student as just expressing your feelings about a situation you observed. At least one example was generated for each level in the whole group setting. Students then worked in pairs to make connections between specific examples from their Learn and Serve experiences and the levels of reflection on the handout. In closure, students shared additional examples as a whole class; and questions and clarifications were discussed.

Step 2 - Self-evaluation. Immediately following the presentation of the levels of reflection, students were given the following directions for “marking up” their first written reflections:

Re-visit your written reflection #1. Note on your paper where you see evidence of various levels of reflection according to Jay & Johnson’s (2002) and Galvez’s (1995) guidelines (use the handout as a reference). Use a different color pen or pencil to indicate the difference between Jay and Johnson’s and Galvez’s codes. For example, use a blue “5” to indicate Galvez’s level five and a red “3” to indicate Jay and Johnson’s critical level.

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Students completed this task outside of class time and submitted a hard copy of their first written reflection with their “markings” at the next class meeting. In class, participants made comparisons with a partner and discussed the process of utilizing the levels of reflection for self-evaluation.

Step 3 - Guided reflection feedback. I reviewed participants’ written reflections and provided comments according to Reiman’s (1999) guidelines for “guided reflection” feedback. As Reiman notes, “employing the reflective framework provides a basis for encouraging the development of complex internal thinking in one’s students” (p. 598). For example, Molly (all names are pseudonyms) wrote, “Some of the students have difficulty with English, so it is interesting to see the students attempt to master Spanish.” My response, according to Reiman, was to prompt inquiry: “What relationship do you see here? How does one language influence the other?” In another example, Kevin wrote, “The teacher will have the student write about something that pertains to the story but in their own lives.” My response acknowledged and clarified ideas: “It seems that the teacher is asking students to make ‘text to self connections.’ Are the students explicitly taught what this is and when and why to use this strategy?” On average, each participant’s reflection included three comments from me. These papers were returned to students so they could review the comments.

Data Analysis

Written definitions and reflections were read multiple times, and annotations were recorded in the margins of the papers. These notes were coded (Seidman, 1998), and themes across samples were developed. Additionally, since one of the main purposes of the study was to determine if participants could be encouraged to become more critical and evaluative in their reflections, the written reflections were categorized holistically according to descriptive and critical categories. If the entire response was a narrative retelling of

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events from the Learn and Serve placement, the response was coded as “descriptive.” If any part of the response indicated a critical thought process, it was coded as “critical.” Examples of evidence of critical thinking included comments such as, “I think the students would have been more engaged if...” or “That reminds me of our reading about...” or “Why did the teacher choose [X] method of instruction?”

Findings

Findings are reported according to the two data sources of definitions and written reflections. It is important to note that the data results do not match the total number of 20 participants in the study. This is due to absences on any given day of data collection. For example, there were 19 students in attendance when the pre-definitions were conducted. By the time the twentieth student completed this task, she had participated in the levels of reflection lesson, thereby making her pre-assessment data unreliable. Likewise, there were 16 students in attendance when the post-assessments were collected and conducted, which accounts for the discrepancy between pre- and post-data.

Definitions. Coding of participants’ definitions for “reflection” revealed two categories: (a) Describing, reviewing or summarizing something from the past and (b) evaluating/analyzing something from the past to determine what was good or bad, what should be changed or how to make improvements. The first category is representative of a descriptive retelling of events. For example, Marisa said reflection means “Looking back at something.” Joe’s definition was also descriptive, noting reflection means “The act of looking back upon one’s previous actions and said statements.” In both definitions, we see the notion that reflection is a process of recall or looking back at something.

In contrast, the second category reveals more critical thinking about past events. Rachel defines reflection as “Your

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thinking about your thoughts, feelings and behavior. You could be thinking about what you did wrong or what you did right. It is a way to help you improve.” Similarly, Colleen writes, “Looking back on past experiences and applying them to the present. Being able to evaluate myself so I can adjust my teaching habits and methods to accommodate all students and levels of learning.” These definitions move beyond a mere recall of events, and add the component of being able to learn from past experiences, which in turn may improve teaching practices (Schon, 1983; 1987).

Prior to intervention, 10 participants defined “reflection” as a descriptive, retelling procedure; and 9 participants thought of it as a critical process to be done for the purpose of making changes. After intervention, 5 participants’ definitions fit the descriptive category; and 11 fit the critical category. While the number of participants is not equal in pre- and post-data, it is important to note that fewer students provided descriptive definitions; and a greater number of students provided a critical definition in the post-assessment. Therefore, the post-definitions of “reflection” show a greater understanding of reflection as a process of evaluating rather than just retelling events.

Regarding “reflective practice,” coding of data also revealed two categories: (a) Practicing reflection; looking back, and (b) implementing changes/modifications based on what you observed or reflected on; applying knowledge learned through reflection. Geneva provides a descriptive definition of reflective practice by writing, “The ability to frequently reflect on many of your thoughts and actions.” This statement represents the notion of merely engaging in reflection. Conversely, Angela writes, “Looking at a situation as a learning experience. What one learns through the reflection, how to better oneself as a teacher due to the reflection.” We see in Angela’s definition the idea that reflection can be used to make changes in teaching practices.

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Similarly to the definitions of “reflection,” the categories of “reflective practice” represent descriptive and critical levels of thinking. Prior to intervention, 8 participants’ definitions were in the first category, 10 were in the second, and 1 participant did not respond. After intervention measures, 4 students’ definitions represented the first category and 12 represented the second category. Again, we see a shift toward a more critical understanding of reflective practice after the intervention. Therefore, the definitions of “reflective practice” indicate greater understanding of this as the practice of applying knowledge learned through reflection.

Written reflections. Written reflections were coded holistically according to descriptive or critical categories. Prior to intervention, 8 responses were descriptive and 11 were critical. Post-intervention, 3 responses were descriptive and 13 were critical. This data revealed a similar pattern to that of the definitions, which indicates a greater awareness of the critical aspect of reflection after the intervention measures had been conducted. In general, the written responses signify a shift in thinking from descriptive to critical reflections. Finally, the written reflections point to more critical thinking rather than descriptive responses. The data reveal a distinct change in participants’ responses between pre- and post-assessments.

Discussion

The intent of the study was to raise pre-service teachers’ awareness of what it means to be a reflective practitioner, and to assist future teachers in reflecting critically, rather than simply descriptively. As Jay and Johnson’s (2002) topology of reflective practice indicates, it is desirable for teachers to move progressively through more difficult levels of reflection, with critical being the highest level. The results of this study indicate this is possible through the use of specific intervention methods.

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Boyd and Fales (1983) emphasize the importance of learning from one's experiences as a key feature of the reflective process. The positive shifts in participants' definitions, as indicated in the data, may be a factor of the social interactions during intervention procedures and the use of language as a mediator (Vygotsky, 1978) during the guided reflection feedback stage. Additionally, providing a model of reflection through the use of Jay and Johnson's (2002) and Galvez's (1985) levels of reflection may have assisted pre-service teachers in raising their awareness of being reflective.

Conclusions

As Bowman, Galvez-Martin and Morrison (2005) note, "more studies are needed on the impact training has on reflection and pre-service teacher learning" (p. 346). This study enhances the existing research base in this field. It is evident that interactive intervention procedures can positively affect pre-service teachers' understandings of reflection and the quality of written reflections. While this study was conducted in an undergraduate literacy education course, it could be implemented in any teacher education course with similar results. The intervention procedures described provide a model for supporting pre-service teachers' understandings of being a reflective practitioner, with the goal of improved practices in their future teaching careers.

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**Experiential Learning:
An Exploration of Situated and Service Learning**

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Abstract

Two separate research studies explored two types of experiential learning, situated learning and service learning, used in a liberal arts university setting to further understand their importance in the learning process. From both the service learning and situated learning research, two main findings emerged, limited student reflection and connection of course objectives to the experiential experiences. The lack of continuous, critical reflection in both courses hindered the students' learning. Furthermore, little connection was made between the course content or objectives and the experiences. Results from these studies provide insight and knowledge into the importance of structuring quality experiential learning courses. More specifically, the findings show the importance of instructors designing and structuring courses, which incorporate opportunities for students to learn how to critically reflect by engaging in ongoing reflection throughout the experience and purposefully aligning the objectives of the

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course with the goals of the experiential learning project to have more positive outcomes on student learning.

Literature Review

Hands-on learning is not an innovative idea for the teaching and learning process. For many years college programs have used experiential learning to enhance student learning. Some areas of study, such as the field of education, use more traditional forms of practicum or experiences to ensure that students have a meaningful connection between theory and practice. The idea behind hands-on learning is constructivist in nature by helping students to create meaningful experiences that will connect their prior knowledge or schema and assist in creating knowledge (Mezirow, 1994; Baxter Magolda, 2004). Various forms of hands-on or experiential learning exist, including practicum, internships, service learning, learning communities, field-based study and field trips. Each form of experiential learning can serve a purpose for the teaching and learning process if the goals and methods for implementation are well planned and structured. The setting, preparation the student receives, assurance of continuous reflection, how the student is received and utilized in the placement all impact learning (Eyler, 2002).

Mission statements of institutions of higher education often promote students to possess critical thinking skills, multicultural competence and citizenship, but the challenge lies with how to achieve this. Through epistemological transformation, students evaluate current assumptions and thinking by developing new assumptions of thought that will allow the individual to see issues or ideas from a more multifaceted framework (Baxter Magolda, 2004). As Mezirow (1994) points out, individuals make meaning of their experiences through the structure of their “frames of reference,” which consist of two components: “habits of the

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mind and a point of view” (p. 5). Habits of the mind consist of guidelines influenced by broad assumptions and parameters, such as culture, economic status and political views, and eventually get translated into a point of view (Mezirow, 1994). Individuals’ points of view can continuously be challenged and further solidified through experiential learning and epistemological reflection. Thus, through epistemological reflection and engagement in experiential learning, students interpret, evaluate and construct their own meaning. This research explores two types of experiential learning used in the liberal arts university setting and their value to the learning process. Experiential learning is “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb, 1984, p. 41). Two different types of experiential learning will be explored in this research, situated learning and service learning.

Situated Learning

Situated learning is knowledge gained and applied to daily situations (Stein, 1998). Situated learning was first proposed by Lave and Wenger (1991) in examining communities of practice. Communities of practice (COP) go back to the apprenticeship learning days of midwives, tailors and butchers, where the goal was to have a novice learner enter the “periphery” and over time gain knowledge and learn the community customs as they approach legitimate entrance into the profession (Buysse, Sparkman, & Wesley, 2003). The idea of learning the customs and rituals of the COP aided the member to relate and identify themselves as a bona fide member within the community (Wenger, 1998). A COP is considered a “practice-centered” model which focuses on the importance of the practitioner contributing to passing of the knowledge on to the newer members. COP is different from community of learners or learning communities because of the

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emphasis in COP on reflection by the apprentice and interaction with individuals of varying levels of skill (Buysee, Sparkman, & Wesley, 2003). COP have been used in more modern practices with college of education programs to guide pre-service teachers in practicing or performing their knowledge that they learn in the classroom in a practicum setting with an authentic method of reflection and open dialogue between the pre-service teacher and those already in the field (Barab & Duffy, 2000).

A true COP has three components that must be present. The first is all those that participate in the COP have a common goal, secondly the COP is situated within an interdependent system where all individuals are connected to something larger regardless of their diverse abilities (i.e., a school district; the profession; the organization) and finally every COP has a reproduction cycle or ability to regenerate itself (new members on the periphery enter in as others leave) (Barab & Duffy, 2000; Buysee, Sparkman, & Wesley, 2003). Perhaps the two common threads that a COP has with other forms of experiential learning are situated learning, where learning is situated within an experience and reflective practices (Buysee, Sparkman, & Wesley, 2003). Both situated learning and reflective practices are a common thread that is held among other forms of experiential learning.

Similar to COP, the concept of situated learning is based directly on learning in context with hands-on approach as compared to learning more in the abstract or decontextualized state (Buysee, Sparkman, & Wesley, 2003; Kirschner & Whitson, 1997). Situated learning has four premises in the teaching and learning process:

- (1) Learning is grounded in the actions of everyday situations;
- (2) Knowledge is acquired situationally and transfers only to similar situations;

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- (3) Learning is the result of social process encompassing ways of thinking, perceiving, problem solving and interacting in addition to declarative and procedural knowledge; and
- (4) Learning is not separated from the world of action but exists in robust, complex, social environments made up of actors, actions and situations (Stein, 1998, p. 2).

Perhaps the biggest difference between a COP and situated learning is that a COP has a regenerative nature of those that participate in the community as a learner then becoming fully integrated within the system within time. Whereas in situated learning, an individual can engage in the environment from a teaching and learning perspective, but does not necessarily have to fully integrate and become a part of the system. Overall, situated learning is more simplistic in definition and focuses more on the teaching and learning perspective, rather than the true integration into a community.

Service Learning

Similar to situational learning, service learning engages the learner in real-world, hands-on experiences and interactions with diverse populations and environments (Ngai, 2006). Service learning can be defined as a form of experiential learning rooted in the philosophical and conceptual contributions of John Dewey, Paulo Freire and David Kolb (Eyler & Giles, 1994) that encourages intellectual development and civic engagement through students' interactions with real-world problems (American Association of Higher Education, 1997). For the purposes of this study, the definition can be expanded to include the reciprocal connection between the service and the learning, thus the learning reinforces the service, and the service reinforces the learning (Prentice & Garcia, 2000). Theorists have defined deep learning as

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integrative, transformative and empowering (Kolb, 1984; Freire, 1973; Mezirow, 1994); thus, these frames demonstrate the connections between learning and service learning.

Freire (1973) points out that teachers talk about reality as if it were “static” and “compartmentalized” without any context (p. 57). To address the development of static knowledge, interactions with well-developed contexts are essential to guide individual reflection. Thus, it is through critical reflection of one’s experiences with one’s environment or experiential learning that non-static learning occurs. Putting one’s self in the context and environment of another allows for deeper understanding, thereby gaining a complete picture through active integration. Active interactions, reflection and the anticipation of experiences with the environment through engagement in service learning have the potential to empower an individual. Thus, for individuals to be empowered, one must have the capacity and desire to critically think and reflect on assumptions, judgments and ideas.

Transforming one’s thinking or developing one’s perspective is more intricate than simply learning a skill. It is how one analyzes sources, the certainty of information and the limits of knowledge, that alters one’s contextual judgments and thinking resulting in new assumptions and ideas that will allow the individual to see concepts in a multifaceted framework (Baxter Magolda, 2006). In analysis of several research studies, students reported that service learning was the vehicle that enhanced their comprehension of course material, provided them with greater insight into themselves and others and enhanced their knowledge and appreciation for diversity and social justice competencies (Eyler & Giles, 1994, 1999; Kretchmar, 2001; Mayhew & DeLuca Fernandez, 2007). In addition, it is through the pedagogy of service learning that students are afforded the opportunity to interact with diverse environments or contexts, resulting in a deeper understanding (Baxter Magolda, 2006). It is through service learning that students interpret, evaluate and make meaning of their

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experiences resulting in transformation of their beliefs and knowledge.

Methodology

Two different studies are discussed here to explore the nature of situated learning and service learning. The studies were both completed at a small liberal arts university in the Midwest. Both studies generated similar findings regarding experiential learning and its value as a teaching pedagogy in liberal arts institutions.

Situated Learning

In the fall of 2008 in a junior level early childhood curriculum class, action research was conducted on eleven students to explore situated learning within a kindergarten classroom in a large urban Midwest school district. The average age of the students was 23.6 years, all students were females, 91% were Caucasian (n = 10) and 1 student identified herself as African American (n = 1).

The first day of class the students read through a researcher-designed case study that embedded numerous early childhood curriculum concepts and theories of teaching that acted as the pre-test. The second day of class, the class as a whole travelled to the urban kindergarten class to do an informal visit to learn about the school, class and teacher and observe the students engaged in a lesson. All students in the university class were paired up by the kindergarten teacher (cooperating teacher) with a kindergarten student. This assigned child was to be the focus of observations for the semester. After the second class, students alternated between attending either the university for curriculum content or the elementary classroom. This switching of students going back and forth between the kindergarten classroom and the

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university occurred throughout the semester for a total of 14 weeks. Each time the university students went to the kindergarten classroom they were required to reflect in their journal after the visit. In addition a variety of assignments were conducted during the semester, including a target child needs assessment, curriculum unit development, lesson planning and implementing a lesson to the class as a whole. The main focus of the situated learning was for the students to engage in reflection personally (using their daily journal), as a community of learners (as a class within their assigned groups) and as a class as a whole (weekly online discussion). The second to last class, students completed the same case study as they had been given the first day (post-test). After students finished the case study, they were asked to read through their pre-test case study and to reflect and state what they learned from the course and the situated learning in the kindergarten classroom. Themes were found by content analysis of the journals that students kept throughout the semester, online reflections, the pre- and post-test reflection and the reflections on the lesson taught (by both the student and the cooperating teacher) to explore how beneficial the situated learning within the kindergarten classroom was to the students' learning.

Service Learning

Participants were eleven students enrolled in the course *Management of Family Resources*, at their liberal arts university. All of the participants were Caucasian, female and domestic students with a median age of 26. During their participation in the service-learning component of the course, six of the participants were sophomores and five were juniors. Four of the participants were pursuing or obtained degrees in dietetics, three in fashion merchandising, three in family and consumer sciences education and one in early childhood education. Participants' service-learning locations varied, including food pantries, crisis nurseries, clothing thrift stores, a

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residential drug rehabilitation center and a boys' and girls' club. In alignment with the course objective of managing family resources, students were required to individually investigate and select a local not-for-profit agency that provides services to individuals and families within the community. Students were required to complete no less than 15 hours of service learning at an instructor-approved agency, but were restricted from participating at their local church, synagogue or mosque, with the intention to broaden their perspectives and exposure to other populations and issues in the community.

Nonprobability sampling occurred through examination of *Management of Family Resources* course rosters from four semesters: spring 2006, fall 2006, spring 2007 and summer 2007. Rosters were examined for duplication, resulting in the 38 students who were invited to participate. The main source of data from this study was derived from in-depth interviews with participants (n = 11). In addition, data was obtained from students' final reflection papers, the course syllabus and participant surveys. In this study, in-depth, semi-structured 25- to 45-minute interviews with selected participants were conducted, recorded and transcribed. Participants were asked 10 pre-set, open-ended interview questions, along with additional probing questions. Data was analyzed and themes were found using Strauss and Corbin's (1990) theory of analysis comprised of open coding, axial coding and selective coding as well as Merriam's (1998) constant comparative model.

Collective Findings/Discussion

There were two similar, main themes that emerged from both the situated and the service-learning research, limited student reflection and connection of the course objectives to the experiential experiences.

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Limited Reflection

Reflections, especially in regards to the journals, were limited in scope. During the situated learning research, students were required to reflect on several things throughout the semester, including a weekly journal that was to be completed each time attending the kindergarten classroom, online discussions started by the university instructor, various assignments and the lesson plan taught towards the end of the semester. All students did reflect after each visit to the kindergarten class, but a large variability was found between reflections. Instructions for the journal were “reflect on what you viewed, learned, questioned or were interested by in the classroom today.” Some students would make lists of techniques or particular sightings. For example, one student listed “my friend, rug in front, talking in microphone, mix of races, lockers instead of cubbies” on one of her daily reflections. In addition to this short list, the student asked three questions related to the day and no answers are written to answer the questions, thus implying that the student posed a question, but did not seek the answer or did not record the answer once sought. Other students were very anecdotal or literal in their reflections. For example, one student wrote:

Today when I went to Mrs. X’s classroom we did our own centers. I had the students write their names and sight words in shaving cream. My center went well but not all students had time in the centers. I had time to watch my target child. It was in my center and he did well.

Three out of the 11 students started out being literal in reflections and slowly moved to more deep and reflective thinking towards the end of the semester. For example, one student wrote towards the end of the semester:

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I thought my learning center went ok today...there are some things I want to improve on in the future. I would like to teach this lesson again. I felt today that I stopped looking at my surroundings and really taught the children in my center. I was focusing on their responses and really listening, not just waiting to go on to the next “thing’ in order to complete my lesson. I enjoy being around the children. They are so eager to learn and this makes me want to be an excellent teacher!

One interesting finding that emerged through various reflections in the journals was how the university students were very aware of their surroundings. At the beginning of the semester, the researcher asked the university students how many of them had completed practicum experiences in an urban classroom. Out of the 11 students, only 2 had experience in an urban classroom. For the remainder of the students (n = 9) this was their first experience in what is considered a “city school” (urban). In analyzing the journals all students (n = 11) commented in some fashion on the setting of the learning environment. In particular towards the beginning of the semester, students heavily focused on the environment. For example, comments included the following:

- No air conditioning and no fans on, but windows opened.
- ...the building is old.
- I hear lots of cars driving by on the street...it is distracting.
- It is sad that the students [kindergarten students] do not have many supplies and that Mrs. X has to supply them.
- This school is different than where I went to school.
- The materials seem outdated...

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- There is a buzzer at the front of the main entrance to the school...

Towards the end of the semester, it appeared that students shifted their attention from the environment and started to focus more on student learning.

Similar findings regarding minimal reflection were found in the service-learning research. In this case, reflection is referring to the process of critically thinking and analyzing personal assumptions, beliefs and knowledge gained through the service-learning experience. When asked probing interview questions about reflection, participants commented on the need or benefit of reflection in the structure of the service-learning project. Furthermore, participants offered suggestions for incorporating reflection into the components of the service-learning project. Within this particular course, participants' major opportunity for reflection was through their final paper for the project. Participants described the final paper for the project as the only formal reflection required during the service-learning project. Although participants saw the reflective benefits of the final paper, as they commented: "It [final paper] helped to relate all the experiences and put it all together" and "it [final paper] made me think," participants discussed two other reflective opportunities that would have been valuable: writing reflective journals and sharing experiences with peers.

Numerous participants mentioned how keeping a journal during their service-learning experience would have been extremely valuable. When one participant was asked about her reflective process during the service-learning project, she stated:

We did a scant amount of reflection in class and I am sure I reflected some in the paper, but not a lot of reflection. I am wondering if I would have kept a journal or something throughout, I would have

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reflected upon the experience more. It is one thing to do the service and then write about it later when it is not super fresh than to do it throughout.

Similarly, another participant stated:

I think it was just kind of assumed that we would reflect on it [service-learning experience], but I do not remember keeping a journal. I think keeping a journal could have been beneficial if you were about to use it afterwards and maybe one person could read a journal entry each week to the class. In a journal it might be good to write down some of the behaviors or some of the things you witnessed and reflect on them. It would be nice to have something to bring back to the class. It would reinforce why you are doing the service in the first place.

Not only did this participant note the helpfulness of keeping a journal, but also the benefits of sharing and reflecting on her experiences with others in the class.

When asked about the reflective components of the course or project, some participants commented on the reflective sharing that occurred at the end of the course or project, while others did not. Regardless of the degree of reflective sharing reported by participants, they thought sharing their experiences with others in the class is a valuable component to the reflection process and the project as a whole. As one participant noted:

We all got a chance to talk about our experiences. I think it was helpful for me to be able to reflect. It is good to talk about what I did and hear about what other people were doing. I found out about what other things were going on that I would not have

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known about. I would find out about resources in the community.

Another participant stated:

It [service learning] would have been more beneficial if it tied into the class more, less book work and more communication throughout the semester about the experience. We could have all spoken about our service experiences.

These participants illustrated the importance of verbally reflecting with others throughout the semester-long project. Sharing through dialog with their peers would allow participants to see different perspectives and to learn about a variety of community resources.

Course Content and Objectives

After analysis, the second main theme—lack of connection to course content and/or objectives—emerged from both studies. In this instance, course connection refers to the degree in which the course content or objectives of the course related and/or applied to the participants' experiences.

For example, in the situated learning research, one student wrote, "I don't understand why learning centers is considered curriculum?" Even though over the course of the semester university students observed kindergarten curriculum and learned content at the university, not all students appeared to make the connection between what was being observed and that in which was being taught in the university setting. The purpose of the experiential learning was to have students take the content learned in the university setting and apply it, explore it or witness it in the real world setting (the kindergarten classroom). The researcher and cooperating teacher met three times prior to the semester starting to ensure

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a clear understanding of the experiential learning and to share content objectives (outcomes) for the course. However, students struggled to make the connection. One student wrote in her journal, “I struggle with connecting the stuff we learn at school [university classroom] with what I am observing...how is this curriculum?” This came up during online discussions several times throughout the semester and the researcher (instructor) had to redirect the students each time.

In the service-learning research, 9 out of the 11 participants expressed some relationship between the course content and their service-learning experience. More specifically, those 9 participants only noted a connection to 2 (time management and community resources) out of the 12 course objectives. Although one participant stated service learning was “very important to a classroom setting” and recalled talking about “communities and families” in the course, she also stated there was a lack of connection between the course content and the experience. Additionally, she stated, “I do not want to say it was completely random, but I almost felt like there should have been a class that was nothing but service learning. I do not think it [service learning and course content] was a huge correction.” In addition, another participant stated she remembered discussing time management in the course and “learning about organizations available in the area,” but she found no relationship between course content and her service-learning experience. She added:

There was not really one correlation to the other. The service-learning project was geared more towards your major. It would have been beneficial if it [service learning] tied into the class more; less bookwork and more communication throughout the class. It was really difficult to tie together.

This participant found the service-learning experience connected and applied more to her specific career than the

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course content. Overall, there was a lack of connection to the course as a whole.

Conclusions

The purpose of this research was to explore two different types of experiential learning, situated and service learning. The two common themes that emerged from both studies were the lack of reflection and connection of the experience to the course objectives. Numerous researchers illustrate the importance of continuous critical reflection about one's environment or experiences to develop deep, transferable and non-static learning (Eyler, 2002; Eyler & Giles, 1999; Freire, 1973; Kolb, 1984; Schine, 1990). In both of these studies, participants lacked continuous, critical reflection, which hindered their experiences. This supports Eyler and Giles (1994) and Schine (1990), who argue structured time for ongoing reflection is one of the essential components to quality experiential learning. Although reflection is considered a critical element to both situated and service learning, it is perhaps the most challenging to assess and measure (Simmons & Cleary, 2005). Reflection is something that needs to be learned and should be the precursor to any experiential learning experience to ensure the fullness and richness of the experience (Eyler, 2002; 2009). The question lies with how can reflection be taught at the university level? Eyler's (2002) reflective map serves as a resource to organize and structure reflection in alignment with course objectives before, during and after the experience. Engaging students in reflection before the experience or "prereflection" prepares the student for the experience by allowing them to explore personal assumptions about the community, the populations or about the experience (Eyler, 2002). The "prereflection" prepares the student for reflection during the experience, which should be ongoing, critical, tested and connected to the course. When this occurs

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during the experience, reflection at the end of the experience will contain depth and breadth (Eyler, 2002). The utilization of critical, integrated and continuous reflection can serve as a tool for personal and academic transformation, but only if the design of the course supports this process.

Findings from these studies concur with Harkavy and Romer (1999) that structural components are essential to successful, transformative experiences. To make the experience more meaningful, instructors need to align the goals of the experiential learning with the course, involve the students in the decision-making process of the experience and be proactive in a creative manner to ensure that students engage in meaningful and purposeful reflection (Berman, 2006). The challenge of teaching at the university level of meeting various standards and competencies is something with which most instructors are faced. Involvement and reflection of the students can help to alleviate these pressures and to make the learning more authentic to the students, which is the ultimate goal of experiential learning. Students need to see the purpose of the experiential learning and how it directly connects to the learning processes and be vested in the experiential placement (Berman, 2006). In order to have students vested there may need to be student choice and/or instructor scaffolding to ensure that the students feel comfortable in their environment. In the service-learning research, students were able to select their placement location with the approval of the instructor. However, in the situated learning research the students had no choice in the location and this newness of the situation was noted in their journals and in online discussions and somewhat over-shadowed the learning process for the first four to five weeks of the course. Not to suggest that new situations cannot challenge and promote authentic learning, but if the placement location is hindering learning and taking away from the learning process, then further scaffolding (i.e., on-site instructor availability) or instructor intervention may be needed. Ultimately, the goal is

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to have students feel comfortable at a certain level to learn, perform and feel a sense of autonomy in their experience, which should be examined to have successful experiential learning experiences (Levesque-Bristol, Knapp, & Fisher, 2010).

Further research should examine prereflections and various forms this can take to help university students to reflect on experiential experiences. In the situated-learning research, the class did online reflections as a class on a weekly basis that were facilitated and directed by the instructor. The discussions usually focused on various topics that arose during the semester to make the learning authentic. Further research should look at how online technology can help with fostering reflection in experiential learning settings as a teaching and learning tool for the university classroom.

In conclusion, experiential learning has been a teaching and learning practice used for many years. Both situated and service learning, sub-types of experiential learning, are valuable for creating authentic learning experiences for university students if students are able to reflect and see the purpose of the experiential learning in relation to the course objectives.

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New Dimensions for the Multicultural Education Course

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Abstract

For the past sixteen years, the Five Dimensions of Multicultural Education, as proposed by James A. Banks (1995), have been accepted in many circles as the primary conceptual framework used in teaching multicultural education courses: content integration, the knowledge construction process, prejudice reduction, an equity pedagogy and an empowering school culture and social structure. These dimensions are often challenged by students and others with varying ideological perspectives; in addition, the purview of multicultural education courses at the college level has expanded significantly since this framework was first developed. Thus, I propose conceptualizing a more global and inclusive perspective by introducing five new dimensions of multicultural education, adapted from the five contexts of critical pedagogy, as developed by Joe L. Kincheloe (2005): the social dimension, the political dimension, the economic dimension, the cultural dimension and the cognitive dimension. These new dimensions comprise a useful paradigm for the college-level course in multicultural education.

New Dimensions for Multicultural Course

Introduction

Recently, in the pages of this journal, Robert W. Simmons (2010) pointed out that in college-level multicultural education courses, many white students “adopt a colorblind mentality”; thus, they are often hostile toward race-related discussions in the classroom (p. 34). In my multicultural education course I, too, have noticed this phenomenon and have confronted it with fervor, naively believing that I have convinced these students that such discussions are indeed critical, especially for young teachers who have limited experience in multicultural environments. My idealism was challenged, however, when reading course evaluations at the end of last year’s semester-long class. Two evaluators, who identified themselves as minority students, pointed out that I was overcompensating by teaching directly to the white students, while relying on the minority students to help me defend my positions. A product of a historically white liberal arts college and now teaching in a similar institution, I realized that I was basing my teaching on a reverse deficit model, seeing my white students as deficient in multicultural issues, rather than drawing on the funds of knowledge that they might possess. Meanwhile, I cast the minority students in positions of authority, not realizing that they, too, might have limited multicultural experiences.

In order to address these concerns I carefully examined the paradigm, one that I considered the industry standard, which has guided my multicultural education course in recent years—the Five Dimensions of Multicultural Education, as proposed by James A. Banks (1995): content integration, the knowledge construction process, prejudice reduction, an equity pedagogy and an empowering school culture and social structure. The seventh edition of his co-edited textbook, *Multicultural Education: Issues and Perspectives* (Banks & Banks, 2010, p. 20), continues this tradition. Few alternatives to Banks’ dimensions have been suggested, one being the four dimensions proposed by Christine I. Bennett in her textbook,

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Comprehensive Multicultural Education: Theory and Practice (2007), now also in its seventh edition: curriculum reform, multicultural competence, equity pedagogy and social justice.

Both of these frameworks are theoretically sound, and my intention is not to claim that they are inadequate and should be replaced; however, the purview of multicultural education courses at the college level has expanded significantly since these frameworks were first proposed. Further, as Professor Simmons suggests, too much focus on hot button issues might interfere with the important work that needs to be undertaken in the multicultural education course. Issues of content integration, curriculum reform, multicultural awareness and competence, equity pedagogy and social justice have been the staples of the multicultural education course and should continue to be addressed, but new areas have evolved outside the realms of race and culture to make the curriculum more inclusive. For example, discussions on twenty-first century issues such as globalism and the environment need to be added to the growing list of issues that now includes multilingualism, gender, class, exceptionalities and religion. Similarly, I will not assert that we have won the battle for a more inclusive curriculum or have eliminated labeling practices or racial disproportionality in special education. On the other hand, I propose that we need to promote a more global perspective when discussing the dimensions of multicultural education.

To help envision this global perspective, it is useful to borrow from the field of critical pedagogy. Thus, I suggest conceptualizing five new dimensions of multicultural education, adapted from the five contexts of critical pedagogy, as developed by Joe L. Kincheloe (2005). These are the social dimension, the political dimension, the economic dimension, the cultural dimension and the cognitive dimension. These new dimensions easily consume the currently accepted dimensions while including the more contemporary issues that teachers of multicultural education courses will face in the immediate future. In addition to the theoretical discussion that

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follows, I argue that these five dimensions comprise a useful paradigm for the college-level class in multicultural education, a paradigm that is at home in the teacher education programs of liberal arts colleges.

The Social Dimension

For Kincheloe (2005), critical pedagogy must be grounded on a social vision of justice and equality. Therefore, he asked:

Do we want socially regulated workers with the *proper* attitudes for their respective rung on the workplace ladder? Or do we want empowered, learned, highly skilled democratic citizens who have the confidence and the savvy to improve their own lives and to make their communities more vibrant places in which to live, work and play? (p. 8)

Of course, the critically aware teacher will argue for the latter, but what if the classroom itself is geared toward the former? In order to investigate, we might examine the significance of persons, objects and places in the classroom and what messages these signifiers might transmit to students. To borrow from the field of linguistics (Barthes, 1970/1974), these signifiers provide connotations that have thematic value in the classroom; therefore, we can first examine such entities to identify messages that promote social regulation and then consciously seek to dismantle their regulatory effects.

Teachers investigating this dimension would first need to identify specific persons, objects and places which are unique to their classrooms. For an exercise, we might first think of a typical classroom. The category of people would, of course, include the teacher and the students, but might also include teacher aids, volunteer readers, parents, observers from a university, a principal when he visits, etc. For each of these

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entities, social value can be implied by clothing, gestures, and patterns of speech or appearance. For example, social value exposes itself when I supervise teaching interns. When I observe one of my student teachers in a classroom, why do the students adjust their behavior? Is it because I am identified as professor or doctor? Is it because I am normally the best dressed person in the room? When, on very short notice, I once visited an independent school in southern India, why did the principal tell the long line of people waiting to see him that they would have to wait until he took his visitor to lunch? Was it because I represented a position of power? When I taught in a public high school the assistant principal suggested that I wear a tie to class every day because, for him, the tie was like a badge which gave him instant authority. So the social value of the tie represented my place on the workplace ladder.

In addition to assigning social value to people, we can also assign it to objects and places in the classroom. Who has the most comfortable desk and chair? Which map is in the most prominent position? Which authors or historical figures are represented by pictures hanging on the walls? How are the maps hung? Is priority given to one place? How are the bookshelves organized? Are they visually appealing? Are they used as barriers to set off separate spaces in the room? Which books are placed at eye level and which are on the uppermost or bottommost shelves? Such decisions, even made unconsciously, might promote an unintended social value.

The Political Dimension

Similar decisions regarding classroom environment and procedures can be considered in the political dimension. Most educational practitioners would agree with the proponents of critical pedagogy that education itself is inherently political (Kincheloe, 2005, p. 8). Years ago, progressive educator George Counts (1932) argued that for the teacher and the

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school administration “complete impartiality is utterly impossible. . . . This means that some selection must be made of teachers, curricula, architecture, methods of teaching. And in making the selection the dice must always be weighted in favor of this or that” (p. 121). In order to better understand such selections, we can again borrow from the field of linguistics by thinking of political decisions in terms of binary oppositions, oppositions which “mark out social and psychoanalytic relations people may enter” (Selden & Widdowson, 1993, p. 77) and which are irresolvable (Barthes, 1970/1974). Such irresolvable binary oppositions might include upper middle class/working class; white/non-white; heterosexual/homosexual; first language English/second language English; Christian/non-Christian. In the United States the first item in each aforementioned pair represents “privileged students from dominant cultural backgrounds” (Kincheloe, 2005, p. 8). As noted above, for such oppositions, the antitheses cannot be resolved; Roland Barthes argued: “The antithesis separates for eternity; it thus refers to the nature of opposites. . . . Every joining of two antithetical terms, every mixture, every conciliation—in short, every passage through the wall of the Antithesis—thus constitutes a transgression” (p. 27).

In schooling, psychological tension and conflict result when teachers and administrators believe they can reconcile binary oppositions or perform, what I call, “antithetical transgression.” For example, when schools celebrate upper-middle class lifestyles, the voices of working class students are suppressed. Similar conflicts appear when antithetical transgression occurs regarding the other oppositions I mention above: white/non-white; heterosexual/homosexual; first language English/second language English; Christian/non-Christian. When examining the classroom, teachers should understand that the oppositions need not be reconciled, or more concisely, cannot be reconciled. Barthes (1970/1974) wrote: “Mediation upsets the rhetorical . . . harmony of the Antithesis

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. . . and this difficulty arises not out of a lack but out of an excess: there is one element *in excess*” (p. 28). The excesses in the above pairs are found in the elements privileged by the dominant culture, and because the “antithesis cannot be transgressed with impunity” (Barthes, 1970/1974, p. 65), actual harm is done to the subordinated element.

Teachers should not be blamed for transgressions because, for the most part, they “do not intentionally hurt students; they are merely following the dictates of their superiors and the rules of the system” (Kincheloe, 2005, p. 8). For example, because of their background and training, teachers might distinguish between high and low culture and assign value to various art forms—placing ballet over street dance, for instance, or classical music over rap music. The teacher informed by critical pedagogy, however, must recognize such oppositions and strive to reduce excess in one element. Such recognition is essential, especially in diverse classrooms that address a multicultural audience. Kincheloe (2005) argued: “[w]hen critical pedagogy embraces multiculturalism, it focuses on the subtle workings of racism, sexism, class bias, cultural oppression and homophobia” (p. 9). Although schools claim to be politically neutral, they are actually supporting the dominant power structures; the critically aware teacher, then, should examine the political dimensions operating in schools to “expose the hidden politics of what is labeled neutral” (Kincheloe, 2005, p. 10).

The Economic Dimension

Such examination should also occur in the economic dimension. Whereas the political dimension deals specifically with social and psychoanalytic relations, recognition of the economic dimension leads us towards the act of identifying what economic factors practiced in school and society result in discrimination and poverty for so many of our students. One

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need not look far to discover instances of human suffering that are overtly apparent in much of the world, but may be hidden in industrialized countries—for example, in the inner cities and on American Indian reservations in the United States. Since proponents of critical pedagogy see part of their mission to alleviate human misery and suffering, they must first realize that such conditions are not natural, but are “humanly constructed” (Kincheloe, 2005, p. 12). For example, Kincheloe (2005) pointed out the following: “In recent years . . . market-driven, globalized economic systems pushed on the world by the United States and other industrialized nations via the World Trade Organization (WTO) and the International Monetary Fund (IMF) have exacerbated poverty and its attendant suffering” (p. 12).

Future teachers also need to be aware of the many attempts that big business and economic interests have made throughout the years to modify the purpose of schooling, especially in the United States. For example, in 1920, William P. White, treasurer of the National Association of Manufacturers, included the following words in an address to members at the 25th annual NAM convention. Here he complained that public tax dollars were being used to fund the building of a new high school; apparently, White did not believe that a high school in Lowell, Massachusetts, was necessary at all:

I live in a manufacturing town [Lowell, MA]. . . . We are going to spend over a million dollars for a high school to teach the children of the working people of that town white collar, starched collar jobs. . . . The expenditure that is being now made [for the public school system], and the laws that are being passed for its expenditure are as absolutely a waste as though it were thrown into the gutter. (Applause) (as cited in Rippa, 1997, p. 129)

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Notice that this text sought to influence educational policy to maintain a class of workers that were not encouraged to pursue economic independence.

Today, we are warned that the United States is falling behind other countries in science, technology, engineering and mathematics. While it is certainly true that the public educational system does need to address inadequacies, we must be mindful that such arguments are essentially market driven. One group, the Business-Higher Education Forum, an enterprise consisting of Fortune 500 CEOs, university presidents and foundation leaders, which defines its mission as “working to advance innovative solutions to our nation’s education challenges in order to enhance U.S. competitiveness” (2007), released a report in 2007 titled *An American Imperative*. This pamphlet addressed the need for increased classroom study of science and mathematics, subjects “fundamental to our ability to develop the skill sets and knowledge that will keep the United States intellectually vibrant and economically competitive” (Business-Higher Education Forum, 2007, p. 2). Again, while such efforts are noble, proponents of equity pedagogy need to fully understand that these efforts are driven by economic interests, which would prefer to see the schools preparing their students to partake in the marketplace.

In searching for an even more recent example of market-driven educational reform efforts, one should consider the influential Partnership for 21st Century Skills, known as P21 (<http://p21.org>). My state was the first to establish a Center for 21st Century Skills, a bureau that has directly affected the revisioning of our teacher education programs “to ensure that students graduate with the skills needed for success in the global economy” (2011a). The conceptual framework purported by this organization seems innocuous enough. The website explains that “the Framework presents a holistic view of 21st century teaching and learning that combines a discrete focus on 21st century student outcomes” (2011b). However,

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the economic dimension is clearly stated throughout. Elsewhere on the site, we find the following:

As the United States continues to compete in a global economy that demands innovation, P21 and its members provide tools and resources to help the U.S. education system keep up by fusing the three Rs and four Cs (critical thinking and problem solving, communication, collaboration and creativity and innovation). (2011c)

The list of organizations that are members of the Strategic Council of the Partnership includes a sprinkling of educational groups such as the American Association of School Librarians and the National Education Association, but the majority includes large business organizations such as Adobe Systems Incorporated, Apple Incorporated, Cisco Systems, Dell, Hewlett Packard, Intel Corporation, Microsoft Corporation, Oracle and Verizon. There are also a series of companies in the education business, including Pearson, Blackboard, Cengage Learning, Houghton Mifflin Harcourt and McGraw Hill. Currently, sixteen states have now signed on with this influential organization. Thus, students need to be aware of the power of economic interests to drive educational curricula, from the National Association of Manufacturers early in the previous century to groups early in the current century such as the Business-Higher Education Forum and the Partnership for 21st Century Skills.

The Cultural Dimension

Attempts, whether overt or covert, to influence educational reform can also be found by investigating the cultural dimension in a classroom. Because assigning cultural stereotypes to individuals is a learned behavior, educators are

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in a special position to deflect stereotypes and change received perceptions of other historically subordinated cultures. For a methodology, we can call on some valuable work, known as Funds of Knowledge Research and Teaching (Moll, Amanti, Neff, & Gonzalez, 1992), conducted by a team of educators and anthropologists in southern Arizona.

Researchers entered the homes of culturally marginalized families, in this case Native Americans and people of Mexican origin, and acted as ethnographers to learn the “funds of knowledge” present in the homes of their students. Such funds denote “historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being” (Moll et al., 1992, p. 133) and include farming, horseback riding, animal management, soil and irrigation systems, folk medicine, child care, cooking, etc. In her account of this research, Bennett (2007) asserted that students “will learn more in classrooms where teachers know and understand these funds of knowledge” (p. 275), knowledge that was then used “to develop innovative teaching practices that made strategic connections between homes and classrooms” (p. 275). In other words, students realized that the quality and quantity of knowledge they possessed were as important and valuable as what was being presented in the dominant pedagogical narrative; they were then able to engage this narrative in an active, rather than in a passive fashion. Such engagement is a positive move because many “students from similar backgrounds come to realize that success in school may come only with a rejection of their ethnic and/or class backgrounds and the cultural knowledges that accompany them” (Kincheloe, 2005, p. 15). This work is, indeed, exciting because, as Bennett (2007) concluded:

The authors of this research emphasize that their approach avoids ill-founded attempts at teaching a “culture-sensitive curriculum” that is based on

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“folkloric displays, such as storytelling, arts, crafts and dance performance.” Instead, the students’ funds of knowledge are drawn upon to enhance student learning in all the content areas, such as mathematics, language arts, science, social studies and physical education. (pp. 275-276)

Funds of Knowledge Research and Teaching falls under the heading of what is often referred to as “culturally relevant teaching,” a term indicating an approach that “uses the cultural knowledge, prior experiences, frames of reference and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them” (Gay, 2000, p. 271). In her summary of this approach, Bennett (2007) remarked that two of the chief principles of culturally relevant teaching are that “the student’s home culture becomes a vehicle for learning, [and] students must develop a ‘critical consciousness’ through which they may challenge social injustice” (p. 272). Such consciousness is essential, particularly today in the United States where the No Child Left Behind Act and similar initiatives discourage teachers “from taking into account the social, cultural and economic backgrounds of their students and the needs and interests that emerge from them” (Kincheloe, 2005, p. 14).

The Cognitive Dimension

Educators wishing to address these needs and interests can also find valuable tools in the cognitive dimension by playing on the students’ desire to solve puzzles or on their desire for truth. Put another way, each puzzle the teacher proposes, no matter how trivial, plays on the students’ desire for closure. In a classroom, it is possible for teachers to identify enigmas in their home communities and determine the ways in which their students might go about solving them. This strategy recalls

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Freire's discussion on the process of problem posing (1970/1996); he investigated the community around his school to construct generative themes that directly related to his students. The teacher and the student would then construct questions around each theme for investigation, thus, allowing the students to participate actively in the development of their own cognitive skills by acting in an active, rather than in a passive manner.

Students, then, have a stake in developing the curriculum, which moves beyond the narrative found in textbooks and traditional means of content delivery. In order for teachers to promote student activity, they need to act as facilitators rather than as deliverers of knowledge, allowing students "to gain the ability to become self-directed human beings capable of producing their own knowledge" (Kincheloe, 2005, p. 17). Not only do students produce knowledge, but the teachers themselves become learners. Furthermore, in order for a classroom to become dialogic rather than monologic, to become polyvocal rather than univocal, teachers must also become researchers and problem solvers. As Freire (1970, 1996) wrote:

In problem-posing education, men develop their power to perceive critically *the way they exist* in the world *with which* and *in which* they find themselves; they come to see the world not as a static reality, but as a reality in process, in transformation. (p. 64)

In order to promote such a world view, pre-service teachers in the multicultural education class should learn to examine the educational landscape and formulate questions.

In his work on developing leadership potential in students, Douglas B. Reeves (2006) remarked that "[t]he best analytical leaders are not masters of answers but rather persistent questioners" (p. 56). Pre-service teachers should learn that the best analytical leaders are creative and critical when faced with

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seemingly conclusive data. They will seek to uncover the many variables in day-to-day school operations by investigating certain phenomena in the school environment and speculate the reasons behind them. For example, students could investigate the relationship between student demographics and student achievement by uncovering intervening variables (i.e., teacher quality) that lead to achievement gaps, rather than simply accepting that demographics dictate achievement. They could investigate other issues and attempt to uncover reasons for unequal treatment of various groups, such as how the educational system treats males and females differently, how the system treats students with English as a primary language as opposed to students who are learning English or how the system treats students who are white and students who are non-white differently. Answers to queries might reveal that students from privilege often are placed in classes with the most experienced teachers, while students from less-privileged backgrounds sit in classes with the least-experienced teachers. Pre-service teachers might learn that “[w]hat commentators call an ‘ethnic gap’ is, in fact, a teaching gap, a curriculum gap and an expectations gap” (Reeves, 2006, p. 57). Formulating questions and answers in the cognitive dimension will aid in such understanding.

Conclusion

One of the difficulties in teaching the contemporary multicultural education class is that discussions have a tendency to dissolve into pointless ideological conflicts. Even outside the classroom, terminologies with which proponents of multicultural education are comfortable, such as “social justice” or “equity pedagogy,” often result in a severe backlash from others. At a recent meeting sponsored by a conservative think tank, I heard a speaker who was disparaging traditional

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teacher education programs make the following comment: “The term ‘social justice’ is code for academic neo-Marxism.” The speaker was genuinely interested in education reform, but his comment was tinged with rancor and was not helpful in furthering dialogue. Thus, it is important to develop a theory that provides a systematic way of thinking that evades such reactions. The Five Dimensions provide such a means to analyze the classroom and teaching practices in a twenty-first century multicultural environment. The social dimension can identify objects and places that might promote certain thematic values; the political dimension can uncover oppositions between ideas or social categories that cannot be resolved; the economic dimension can identify economic policies that might affect what happens in a school or classroom; the cultural dimension can identify the common knowledge of marginalized groups and incorporate such knowledge in meaningful ways in the dominant narrative; and the cognitive dimension can promote experiential learning strategies.

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Retrieving the Grounding for Teacher Education Programs

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Abstract

This essay argues the importance of teacher preparation programs establishing holistic programs that have a solid intellectual, philosophic foundation that goes beyond a set of prescribed outcomes. In holistic programs, understanding “why” becomes as important as knowing “how.” Teacher education students have a right to expect to go beyond learning a narrowly defined set of strategies; they should expect to have their world views challenged so that they can dig into the philosophic ideas that are a part of their intellectual heritage and learn to engage in the moral and ethical debates that are a vital component of being human.

Introduction

For at least the past ten years, teacher education programs have been encouraged, through federal and state mandates, to focus on standards and performance-based assessment. Expectations for teacher education programs have drastically changed from those of the past: from a curricular experience with field work toward an outcomes-driven, performance

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model. This change has arisen from the massive enthusiasm politicians and business communities have for standards and accountability, based on tests. The performance model dominates so prominently that many in the education field have lost, or are beginning to lose, sight of other purposes, aims and practices for teacher preparation. In this paper, I am suggesting that current mandated educational policies, at both national and state levels, truncate educational purposes and practices, thus diminishing the overall intellectual and spiritual health of teacher education programs, public schools, culture and individual citizens.

The current, narrowly focused way of viewing education as a competitive, standardized system encourages teacher education program policy makers to design the major portion of their programs on “appropriate, standards-based strategies” and assessment techniques. This narrowed vision differs markedly from liberal arts institutions’ mission statements which most often claim to offer students a learning experience that promotes thinking and imagination, designed to answer questions about what it means to be human. Thus, liberal arts teacher educators find themselves caught between the over-regulating policies that have set their programs on a limited curricular path that focuses on a truncated set of outcomes and their liberal arts missions that rest on curriculums that offer a wide range of possibilities. Those advocating the liberal arts approach claim to work toward the flourishing of humankind and for the opening of spaces where true and authentic learning can occur (Nussbaum, 1997). Liberal arts teacher education programs, then, would be better served by following a holistic, or integrative, model where learners and knowledge are both seen in a more comprehensive way than the current performance-based one.

Holistic educators look at the totality of human experience and realize a view of individual learners where head and heart are a unity. The definition that Parker Palmer (2010) gives for transformational education fits the notion of holistic education

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very well: "...understood as educating the whole person by integrating the inner life and the outer life, by actualizing individual and global awakening, and by participating in compassionate communities..."(vii). Palmer (2010) further states that what we want for a complete education is

an education that embraces every dimension of what it means to be human, honors the varieties of human experience, looks at us and our world through a variety of cultural lenses, and educates our young people in ways that enable them to face the challenges of our time. (p. 20)

However, state and accrediting regulations that must be followed divert teacher education policy away from wholeness, moving programs toward technique, business-like practices. In fact, many business entrepreneurs, who have no formal coursework in the discipline of education, have formed think tanks to advise educators on how to run schools and how to "improve" student learning and teacher education programs. Their recommendations follow the product, business model that only looks at "the bottom line," which currently means test scores. In such recommendations, technique is favored over true understanding; and only measurable outcomes of immediate learning are valued. Why are these policies in place with very little public opposition from liberal arts teacher educators?

In this essay, I will attempt to answer that question by giving an explanation of the conditions that have perpetuated the current, narrowed vision of schooling, followed by the problems occasioned by the performance (standards/accountability) model. I will then suggest ways in which teacher educators can recover the grounding for the discipline of education by especially advocating for the return of the study of philosophy to education programs. If the purpose of educating youth is to enable them to work on the problem of what it means to be human, then the mysteries and

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ambiguities of living must be studied; and philosophy is the traditional avenue for such work.

The current performance system has achieved prominence because of a constant onslaught of negative criticism that has been disseminated in the media and by politicians which reports that U.S. schools are “failing” and American students are falling behind students in the rest of the world; that teachers are of poor quality and won’t teach unless threatened; that all students are not ready for college. These claims come from a culture dominated by fear, a culture that feels itself out of control and that claims not to trust public entities (O’Neill, 2002; & Hurley, 2004). As highly visible public institutions, schools, then, are most often measured and found “wanting” by politicians and the general public. Schools provide a wonderful “whipping boy” for the perceived wrongs of the culture.

When asked for a list of the country’s most pressing problems, most politicians and many citizens will report “bad” schools. This accepted notion makes it okay and seemingly imperative for governing agencies to apply an exorbitant amount of oversight to schools and to their teachers. Because societal problems, such as poverty, hunger, and racism, do exist, it is easy to identify a public institution that interacts with all future citizens and to blame that institution and its employees for the problems. Educational thinker Parker Palmer (1998) claims that “teacher-bashing has become a popular sport. Panic-stricken by the demands of our day, we need scapegoats for the problems we cannot solve and the sins we cannot bear” (p. 3).

In addition, individual analysts, such as Bruce Biddle and David Berliner (1995), Alfie Kohn (1992 and 2004) and Gerald Bracey (2003), among a growing list of others, all have research that points to a deliberative effort, since the 1980’s to discredit public schools. Bracey (2003), for example, believes that the criticism is being used to end public schooling in order to put formal education into the hands of the capitalistic private

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sector. Alfie Kohn (2004) agrees and states, “If my objective were to dismantle public schools, I would begin by trying to discredit them” (p. 81). Whether that claim is accurate or not, critics’ claims of falling test scores and lack of academic rigor, and the failure of American students’ test scores to be as highly placed as those in some other countries, combines with a basic societal culture of mistrust and fear to place schools at the center of much negative criticism.

The most recent such public criticism, “Waiting for Superman,” has had, and continues to have, a major impact on public opinion of schools. In that documentary, the ambivalence and uncertainty that people have about what they expect from schools is obvious: parents know, however, that they want them to be “good” and to enable their child to enter college. The problem rests with what is considered “good,” thus the film presents a varying list of qualities required for an excellent schooling experience, with high test scores being the one most often cited. “Waiting for Superman,” is flawed on many levels; however, it succeeds in producing a bold statement against public schools and teachers, and that adds to the mistrust that the public already has of schools and teachers.

These highly visible and deliberately crafted criticisms of schools and teachers, whether on television, in magazines or in films, ultimately result in policy makers mandating further standards, testing, rankings and curriculum standardization, all implemented to the peril of academic freedom and robustness for learning. Having decided that schools are failing, policy-makers, without questioning the claim or looking at the real problems of schools, have defaulted to an overly regulated system of testing and accountability that moves the educational system far away from the purpose of schooling: to help human beings to flourish and find meaning for life and connections to others.

Resting on a reductionist ideology based on a faulty notion that views learners as products upon which proper instruction and pressure can be administered, thus “fixing” them, P-12

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schools, and now teacher education programs, are falling further and further into the technique trap that reduces the purpose of schools to that of having students attain high test scores and schools achieving high rankings. To be fair, many who advocate and work toward implementing standards, rankings and testing are most probably acting from the best of intentions, thinking that if the “proper” technique can be used in all teaching, then all children will learn at a high level. But authentic teaching and learning is messier and more complex than this performance model allows, and children and youth are not their test scores. Most importantly, learning consists of more than what can be measured on a standardized test. Making instruction and curriculum “same” through standardization and holding curriculum hostage to items that can be tested on multiple-choice tests does not ensure equality and quality, even though it sounds like it should. The problem is that students are not products, and they are not the same to begin with, and schooling is but one of many sources of their education. Therefore, applying the same standardized methods and curriculum will not result in equal results (Meier and Wood [Eds.], 2004).

In addition, simplistic solutions, such as testing, applied to difficult problems prevent deep reflection and promise “fixes” that are temporary or only surface level ones. Testing, as the measure of schooling quality, feeds naturally into the penchant to make schooling yet one more commodity to be sold. Even the notion of what it means to be educated is now a limited one. As Deborah Meier (2004) states, “The very definition of what constitutes an educated person is now dictated by federal legislation. A well-educated person is one who scores high on standardized math and reading tests” (p. 67). Therefore, by not investigating deeply the meaning of learning and authentic personhood, education policy makers diminish the quality of education rather than improve it. Through valuing aggressive competitiveness and claiming that it will bring about successful teaching and learning and ranking schools, students, teachers

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and communities by branding them high or low performing creates great divides among communities, schools and students. In such a “race,” test raising techniques are valued above thoughtful learning opportunities that take time, patience and critical thinking to develop. As Stan Karp (2004) notes, “When schools become obsessed with test scores, they narrow the focus of what teachers do in classrooms and limit their ability to serve the broader needs of children and their communities” (p. 57).

A good number of educational thinkers are beginning to make similar claims. For example, last year, Diane Ravitch (2010), who advised President Bush on the development of No Child Left Behind, a major impetus behind the current model, stunned the education world by publicly recanting her advocacy for the performance model. Her criticism of it rests on her realization that the model leads to anti-intellectualism and does not provide the promised opportunity for all children that the No Child Left Behind slogan implies. She concludes her book by stating:

At the present time, public education is in peril. Efforts to reform public education are, ironically, diminishing its quality and endangering its very survival. We must turn our attention to improving the schools, infusing them with the substance of genuine learning and reviving the conditions that make learning possible. (p. 242)

Ravitch’s criticism is in line with such theorists as Elliot Eisner (1994), Nel Noddings (2002, 2003, 2006), Maxine Greene (1998, 2010) and others, who have also pointed out that the performance model which leads to standardizing curriculum experiences prevents schools from becoming sites of positive, joyful, inquiry learning, thus thwarting efforts to offer students possible ways of becoming intellectuals and caring, active problem solvers in both their private and public

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lives. Additionally, these thinkers realize that as standardization and the emphasis on testing and numerical data take their hold on teacher education programs, opportunities for a holistic model for programs decline because as more technique-based and clinical experiences are added to the curriculum to satisfy performance demands, theoretical and philosophical courses are removed or diminished in teacher education programs.

Unfortunately, standards, testing and the clinical model are all strategies; they do not promote thinking, at least not the type of deep thinking that liberal arts colleges claim to value. Therefore, theory, history and philosophy courses should not be removed from teacher education programs because they offer the much needed grounding from which students can find their own agency and learn to make informed, thoughtful decisions, not only about their lives but also about their instructional strategies and their own authentic way of living and of being teachers. Therefore, having a holistic program that values thoughtful discussions of ideas and issues is a “right” of teacher education candidates; and they should feel cheated if a philosophically, theoretically based program is not offered to them.

The value of such a holistic philosophically grounded program lies in having students to actually read primary documents from the philosophers, such as Dewey or Plato, and to grapple with the intended notions embedded in these works and with the thorny ethical issues that philosophers often raise. In this way, future teachers learn to think thoughtfully and critically about the things that truly matter in one’s education, such as the question of the nature of knowledge and the meaning of being educated and living with others in a diverse world. As David Hansen (2007) comments, “Contemporary humanity is indeed drowning in facts and information. Ideas, by contrast, are rarer, and they are more difficult to recognize” (p. 3). A holistic education program not only offers opportunities for its candidates to recognize ideas but to also

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consider conflicting ideas and to encounter notions that disagree with their own held views. Parker Palmer (2010) notes the importance of the academy providing spaces for students to participate in inquiry where “engaging contradictory ideas in creative conflict” (p. 23) is the norm. Other thinkers also note the significance of such inquiry. William Ayres (2004), for example, states, “Teaching, at its best, is an enterprise that helps human beings reach the full measure of their humanity” (p. 1).

These kinds of experiences tend to happen when education is not seen as a route to certification but rather as a real discipline, in and of itself, with a body of theoretical texts and accompanying criticism with which candidates and their professors should engage. Preparing future teachers, then, involves more than providing candidates with strategies, assessment procedures and surface knowledge of well-known theorists and educators. It must provide them with a deep, intellectual base from which to make informed and creative decisions. In other words, effective programs provide opportunities for candidates to realize their agency, to find their unique voices and to realize their connectedness to others.

Excellent classroom teachers must know why they are doing what they are doing, which requires that they understand the histories and philosophies that inform their discipline and pedagogy; this history notes the contradictory nature of the various epistemological ideas that have been put forward by disparate thinkers. Candidates need to understand the complicated and complex nature of learning and the problems associated with living an authentic life. Philosopher Maxine Greene’s life work has consisted of helping individuals, and educators in particular, to see that human beings have existential freedom which they must learn to use in order to live both creatively and responsibly. She particularly sees the purpose of schooling to be one of offering curriculum experiences where students can explore their existential freedom. Greene (1998) defines learning in this way: “All

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depends upon a breaking free, a leap and then a question. I would like to claim that this is how learning happens and that the educative task is to create situations in which the young are moved to begin to ask, in all the tones of voice there are, ‘Why?’” (p. 41). Later Greene states, “I want young people...to identify themselves by means of significant projects...It seems important, as I have said too often, that the projects are most meaningful when they involve others, when they touch on others’ lives” (p. 41).

In order to provide the type of formal education Greene describes, individuals must learn to appreciate nuance and ambiguity. As John Caputo (2006) argues, “The dark ring of ambiguity around life is a crucial ingredient in its richness; it is not something to be dispersed so that we can lead unambiguous lives. On the contrary, the ambiguity provokes interpretation...” (p. 72). He further asserts that refusing to engage with ambiguities and mysteries “is the superficial life, a life made artificially easy by facile answers and too easy acquisitions” (p. 72). He makes an important point, and although he is speaking from a theological perspective, his argument relates equally to education programs. Learning that life and teaching cannot be lived well with simplistic world views is one of the problems with which students must grapple. Life and teaching involve figuring out how to choose between alternatives, sometimes between two goods.

Nel Noddings (2006) agrees with the importance of offering learning experiences to students, both at the P-12 and university levels, which require intense consideration. She advocates teaching students to investigate the many sides of existential and public problems and to then share in conversations about the multi-layered dimensions of those problems. Noting that “Teachers and students are rarely invited to turn a reflective eye on their own thought processes and work habits,” (p. 2) she offers in *Critical Lessons* (2006), topics that she would use to structure schooling curriculums (rather than the traditional, stand-alone disciplines). Arguing

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that these problems require not reason but also an awareness of the emotions in making decisions, Noddings asserts that "...caring and affect will always be factors in the application of critical thinking" (p. 4). Further, in describing what schooling curriculums should be like, Noddings (2006) states: "A large part of every curriculum should be devoted to Life itself, as Whitehead suggested, and many lessons—not just an odd one here and there—should be *wonderful*—that is, designed to excite wonder, awe and appreciation of the world and the place of human beings in it" (p. 290). Certainly the serious and caring model of investigation and critical thinking that Noddings offers differs markedly from the strictly prescribed performance model, and her ideas should give educators pause for thought.

Programs that do not involve their students in opportunities to wrestle with big ideas and contradictory notions, then, may be offering a superficial curriculum to their students, a "facile" one in the Caputo-sense. Knowing how to approach confusing moral, ethical and pedagogical issues is a much needed strategy that many technically prepared teachers often lack. Opportunities to learn about and practice such engagement are diminished when the foundations courses are eliminated from education programs. In effect, the moral compass and "soul" of the program is thus removed. Without a steady and prevailing intention of including educational philosophy within teacher education programs, then, a major component required for holistically educating teachers is missing.

In conclusion, I have argued that it is time to remember the importance of teacher preparation program experiences to the formation of a solid intellectual foundation that goes beyond a set of prescribed outcomes. An outcomes, performance-based system denigrates the foundational importance of understanding "why" in favor of a narrowly defined "how" approach. Teacher education students have a right to expect to go beyond learning a narrowly defined set of strategies; they should expect to have their world views challenged so that they

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can dig into the philosophic ideas that are a part of their intellectual heritage and learn to engage in the moral and ethical debates that are a vital component of being human. To offer programs that do not have a solid philosophical base is to deny the many possibilities of exploring what it means to teach and learn and how to be fully functioning human beings. It is time for teacher educators to live up to the promises of their liberal arts missions by returning philosophically grounded courses to their curriculums in order to provide a holistic educational experience for their students.

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**The CSI Academy:
Encouraging Diverse Students
to Consider Science Careers and Science Teaching**

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Abstract

The CSI academies employed a multi-layered, collaborative approach to encourage diverse students to consider STEM careers, including science teaching. The academies recruited a diverse group of high school students. This was due, in large part, to the creation of a unique selection process that identified students with unrealized potential. The program included a highly functioning team of high school science teachers; faculty in teacher education joined by faculty in the arts and sciences; and college students as peer mentors. The program benefited from exceptional cooperation between a liberal arts college and a large urban university. A post-academy survey revealed students continued to have strong interest in studying science in college, a decreased interest in forensics as related to law enforcement and an increased interest in becoming science teachers. The authors identify specific success factors that could be applied in similar pre-college programs.

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CSI Academy Overview

In response to a state-wide initiative in Ohio to increase student interest in STEM (science, technology, engineering and math) careers, faculty in the Division of Education at Baldwin-Wallace College and the Chemistry Department from Cleveland State University created a “CSI” academy. Titled “CSI: College Science Investigation—A Forensics Academy for High School Juniors and Seniors,” the program was one of over a dozen different programs approved for funding by the state. The academy was designed to employ hands-on forensics science experience and relevant science coursework to encourage high school students to consider science-related careers. The academy included some direct guidance on science teaching as a career. The program was run twice over a two-year period, with a total of 60 participating high school students.

Each academy was divided into two parts, a two-week summer residential component and a fall session comprised of four half-day, Saturday classes with labs. Besides its attractiveness to adolescents, it was believed that a residential experience would give first-generation students, in particular, a realistic sense of the college experience and its demands—and a factor found to be related to college student retention (Kahn & Nauta, 2001; Noel, Levitz, & Saluri, 1985).

To encourage student interaction and success, students were grouped into four teams that were together throughout the day and evenings, creating active learning communities (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Under the direction of area law enforcement professionals, the students investigated three simulated crime scenes, complete with props, planted evidence and actors. Although the crimes were presented as separate cases, they were designed to have a common resolution. This surprise relationship facilitated the students’ enrolling in fall academic classes.

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College-level science classes, designed to engage students in the scientific components of the crime scenes, were also held concurrently with the investigations. The curriculum included biology, chemistry, physics and geology content. During the summer, the faculty introduced students to the instrumentation employed in the investigative and scientific processes. Students also participated in instructional and hands-on training sessions in law enforcement protocol that were conducted by area law enforcement personnel and college sociology faculty. Students were also exposed to the study of applied sciences such as anthropology, entomology, toxicology and facial reconstruction through presentations by experts in their labs and field settings such as Cleveland's Museum of Natural History.

During the residential component of the summer, student teams took part in sessions on college readiness skills, the basics of college financial aid and application and admission processes. They also took active part in a career exploration session that included a self-assessment based on Keirse's temperament traits (Keirse, 1998), focusing on those attributes associated with scientists and those associated with successful K-12 teachers.

Four Saturday morning class sessions were held in the fall term following the summer academy. During this phase, students focused on a single science discipline of their choice. At the conclusion of each Saturday class, faculty led one-hour forensics sessions. During this time, the students combined the evidence gathered from their specific discipline classes. Faculty then guided them through the processes that would lead them to "solving" the summer crimes. During a closing banquet, parents, nominating teachers and academy faculty and staff recognized the achievements of the students. The celebration concluded with the announcement of the "real" crime solutions.

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Collaboration

Per grant specifications, the program was a joint effort between a private and a public institution: Baldwin-Wallace College, a small, liberal arts college in a second-ring suburb, and Cleveland State University (CSU), a large research-oriented institution in the nearby urban center. Having two academy sites introduced students to two very different college campuses. By opening them to a range of college experiences from which they might choose in the future, the program was supporting their choice of the “right” college for them, a sentiment associated with African-American student retention by Allen (1992). In addition, the partnership effectively leveraged the strengths of a small private college, such as an emphasis on close faculty-student interactions, with the resources associated with a large, research-oriented university in a major city. The students particularly benefited from access to sophisticated scientific instrumentation, equipment normally available only to doctoral candidates. Interactions with scientists and diverse graduate assistants in specialized areas such as forensic anthropology and forensic entomology were possible because of the university’s variety of graduate programs and its proximity to major medical, cultural and scientific institutions.

Important, also, to the collaboration was the involvement of key faculty from both institutions. The three program administrators successfully recruited faculty members who were interested in the academy. Fourteen faculty members from six disciplines (biology, chemistry, physics, geology, sociology and education) were involved in the academy along with doctoral and master’s teaching assistants. Several faculty members participated on both campuses, further enhancing the partnership. Teaching stipends were available for instruction, but faculty clearly supported the goals of the academy, working together to plan the curriculum and instructional sessions at each site.

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Four high school science teachers were recruited through advertisement on the college website to participate in the academies. Three of the four were from a local, partner school district; the fourth from a district with a highly diverse student population. They shared instructional responsibilities with college faculty and assisted with labs. Most importantly, however, they created a bridge between the college classroom and the high school academic experiences. The four teachers were available to support the students' academic efforts, holding review and study sessions for them between and after classes.

Academy students were also guided by peer mentors throughout the summer experience. Four college juniors and seniors, majoring in science or science education were selected from a pool recruited by education and science faculty. The college students were trained in effective mentoring practices that would specifically guide their mentees in experiencing some of the important realities of college life (Noel, Levitz, & Saluri, 1985). They were instructed to model the social and academic behaviors of successful college students; to guide the students in time-management and use of technology; and to confront inappropriate behaviors gently, but firmly. Mentors were also briefed on listening skills and maintaining appropriate personal boundaries. The peer mentors accompanied the students to all non-class events and served as over-night resident advisors on both campuses. The mentors also led their teams of seven or eight students through team-building, leadership and recreational activities. They assisted the students in the navigation of their schedules, helping them to become familiar with both campuses and to manage the personal challenges of their new responsibilities and relationships. Several also volunteered as "actors" in the crime scenes.

Finally, the program secured the professional services of investigating officers and detectives, highway patrolmen, coroners and death experts from the region. A sociology

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professor with previous law enforcement experience secured the involvement of these law and forensics personnel. The law enforcement officers worked collaboratively with the academy faculty and staff, deciding on the details of the crimes in the planning stages. During the summer they set up the scenes and walked the students through the collection of evidence, identification of suspects and enactment and training in police actions such as making arrests.

Attracting Diverse Students

Capacity-building in STEM fields was the state's overarching purpose for funding the STEM and foreign language academies in Ohio over a three-year period. To that end, academies were to make concerted efforts to attract rising juniors and seniors who either might not be considering college study in a STEM major, or might not even be considering higher education. It was decided early on that the CSI academies would not be geared to the gifted or the high-achieving students, assuming that they were already being supported in their career pursuits. To incentivize our efforts, the state required that all Ohio academies arrange for students to earn both high school and college credit for their successful completion of the programs.

A major objective of the CSI academy, then, was to attract a diverse group of students. It was determined that the program needed to include components that would counter common barriers to participation of under-represented students, particularly uneven academic preparation, financial challenges and limited access to college information. Academic support was provided by including the high school teachers who offered classroom assistance, tutorial help and additional study sessions for all students. The grant from the Ohio Board of Regents was designed to help with financial concerns by covering housing and tuition costs for every student. However, we believed that even that might not be sufficient for those

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students who needed to hold summer and weekend jobs to support themselves and their families. Therefore, the academy included a stipend for every student participant; roughly the equivalent of three weeks of pay at minimum wage. We were also aware that high school students might not have access to the computer technology needed to complete assigned work between the summer and fall sessions and to stay connected when not on campus. To address this need, smart phones were issued to all participants each year and mini-computers were available to students for the second academy. Finally, as travel to our suburban campus might also prove to be a challenge, we included limited funds to support transportation for students with this need.

In addition to the financial support, programming was included that would address limits to college access. College admission personnel held sessions on how to select a college, apply for admission, seek financial aid and compare costs. This programming not only helped to fill in knowledge gaps for first generation college students, but highlighted the academy goal of college attendance for all.

Recruitment and Selection

The academy was advertised by the Ohio Board of Regents through traditional media and their website. We also took advantage of the numerous school partnerships that Baldwin-Wallace's Division of Education has in order to get the word out about the academy. We posted information and applications on a website created for the academy and sent post cards directly to science teachers across the state, announcing the opportunity.

In addition to encouraging a diverse pool of applicants, our recruitment goals were to attract those students who showed promise in science study, but who might not have shown strong interest or performance. Our materials highlighted this

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distinctive feature. Applicants were required to secure the nomination of a science teacher who knew them well. These nominating teachers were asked to comment on whether they believed that this hands-on program might have a positive impact on the student, motivating him/her to attend college and to study science. The nominating teachers were also directed to rank the applicants compared to all other students they had taught on the following characteristics: academic achievement in science, academic potential in science, motivation to learn, ability to work to resolve challenges, ability to self-assess, cooperation in groups, ability to work independently and overall maturity level. The application also included a student essay on their interest in the academy and their own assessment of the challenges they expected to experience if selected. Information on prior science courses and grade point averages was also requested.

To select the 30 participants for each year, a unique selection process was employed. A simple rubric was created to aid in the evaluation of applications (see Figure 1). However, the values for some characteristics were weighted to achieve our recruitment objectives. An applicant that was ranked high in science potential, but slightly lower in science achievement, for example, would receive more rubric points than one with high potential and high achievement. Similarly, having a grade point average between 3.0 and 3.49 scored higher than a grade point average of 3.5 or up. This rubric, along with the teachers' statements and students' essays, allowed us to identify those students for whom this experience might really make a difference.

**Figure 1. Scoring Rubric for CSI Applicants—
With Differential Weighting**

	Teacher Ranking Compared to Other Students			
Characteristic	3 points	2 points	1 point	0 points
Science Achievement	Top 25%	Top 10%	Top 50%	Lower 50%
Motivation	Top 25%	Top 10%	Top 50%	Lower 50%
Self-Assessment	Top 25%	Top 10%	Top 50%	Lower 50%
GPA	3.0-3.5	3.6-4.0	2.7-2.9	Below 2.7 or none reported
Science Potential	Top 10%	Top 25%	Top 50%	Lower 50%
Works to Resolve Challenges	Top 10%	Top 25%	Top 50%	Lower 50%
Group Cooperation	Top 10%	Top 25%	Top 50%	Lower 50%
Independence	Top 10%	Top 25%	Top 50%	Lower 50%
Maturity	Top 10%	Top 25%	Top 50%	Lower 50%

Demographic Results

The selection process was successful in helping to enroll a very diverse group of high school juniors and seniors. Demographic information was collected from the final evaluation instrument, completed by the students (see Table 1). It revealed that 31% of the students were non-white, with African Americans comprising the largest group, followed by Asian and Hispanic students. Most participants hailed from urban environments and many were from families with limited means. Twenty-six per cent of the participants had at least one parent for whom high school was the highest level of education. Participants’ academic backgrounds varied with 28% having grade point averages (GPA’s) between 3.0 and 3.49. Gender was not a weighted factor, but the academies enrolled 39 females (65%).

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Table 1: CSI Academy Participant Demographics										
Gender		High School GPA			Minority Groups			Parent EDU = HS	Urban School	Financial Need
F	M	4.0-3.5	3.4-3.0	2.9-2.5	Afr Am	Asn	His			
39	21	36	17	7	14	3	2	29	38	19
Percentages										
65	35	60	28	12	23	5	3	26	63	32

Program Outcomes

Students completed interest surveys as they arrived on campus the first day of the summer term, indicating their level of interest in the sciences, forensics science and science teaching (see Table 2). Not surprisingly, entering students reported strong interest in forensics science and studying science in college. They reported little interest in being science teachers. On the final day of the fall term, the students completed the same survey so that comparisons could be made. On the post-survey, students' interest in studying science remained strong after the academy experience. Students' interest in forensics science decreased. However, their interest in being science teachers nearly doubled at the end of the academy experience.

All but one of the 60 students finished the academy. (One student who was doing well decided not to attend the fall sessions in order to pursue other interests in high school). Each of those who completed the program received college credit for the experience, most earning grades of "A" or "B" for the course. Nearly all of the high schools accepted the credit toward graduation requirements, with only one private school declining.

Table 2: Changes in Student Interest Pre-and Post-Academy Surveys			
Interested in:	Extremely or Somewhat Interested	Neutral	Very little or Not at all Interested
Science major			
Pre-	47	8	4
Post-	47	4	7
Forensics career			
Pre-	46	9	4
Post-	34	10	14
Teaching science			
Pre-	12	22	25
Post-	23	12	23

Responses do not equal 60 due to unreported data.

Discussion

It was somewhat expected that because students came to the academy with relatively strong interest in science they would continue that interest throughout the academy. It appears that their horizons were broadened, however, with interest in forensics science in particular decreasing. Both of these outcomes still supported the objectives of the academy; it was never the intent of the academy creators to encourage students primarily to become forensics scientists. The decreased interest in forensics, however, might reflect the not-so-glamorous realities of investigative work, as well as an increased exposure to alternative science fields and careers.

The increased interest in teaching science was a surprising outcome. It had been decided early on not to push this aspect of the program on students. Our emphasis consisted of a one-hour career session which began with an explanation of the scholarship opportunities and job outlook data for science and

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science education majors. The session presenter then led students through a self-assessment of Keirse (1998) traits that align with teaching and science-based careers. Students responded well to the information, but it is not likely that this session alone accounted for their change in teaching interest. Instead, we believe that the students were influenced by the positive interactions with the teachers that surrounded them in the academy. Three of the peer mentors, the high school teachers, faculty and academy director were all dedicated teaching professionals. Each unknowingly expressed his/her joy in teaching by demonstrating commitment to the students' learning throughout the academy.

There were a number of key factors that led to the successful collaborations in the academies. The successful pairing of the private and public institutions can be attributed to the non-competitive nature of the relationship. It was discovered early on that we were not in competition with one another for student enrollment at our respective institutions. We truly believed in the need for students to choose the best match in a college setting. In addition, we saw that the two institutions could easily represent a viable continuum of education for students. Therefore, we purposely focused the undergraduate work on the liberal arts campus and highlighted the graduate opportunities at the large state university. This approach was in line with the science pipeline and career progression that Russell and Atwater (2005) found important in encouraging students' persistence in science study.

The partnership also worked because all parties were willing to allow the relationship to evolve. By year two, we were sharing time, resources and talents more freely across institutions than the first year. When the need arose, faculty taught on both campuses and peer mentors remained over night at both institutions, for example. Symbolic of our closer connection, in year two we created one set of student t-shirts and hats, in a neutral color, instead of a set in school colors for each campus.

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The extensive role given the peer mentors was also important. Students were enamored with these college juniors and seniors. After year one, the mentors suggested that they could assume the resident advisor roles for the night shifts and serve on both campuses. This intensified the interaction with the students and gave the mentors responsibilities that expanded their leadership and professional growth. The mentors reported an increased interest in problem-based learning after seeing it in action in the academies. The pre-service teachers noted increased confidence in their ability to connect with high school students and expressed an enhanced commitment to engaging their future students in science so that they would truly want to learn.

Recommendations

Funding for the academies was extremely generous, topping \$450,000 for the two years of the program. Because of this, complete replication of the CSI academy is not likely. However, a number of success factors are recommended for inclusion in any efforts to encourage diverse high school students to consider college attendance and teaching or science careers.

Partner with high school teachers: As noted earlier, the role of supportive K-12 science teachers has been found to be one of the most important factors in leading African American students to science majors and careers (Russell & Atwater, 2005). Most of the CSI nominating high school teachers understood and supported our quest for students with unrealized potential, although some urged us to take their “stars.” Our requirement that applicants secure the nomination of a science teacher created an immediate link between the students and their high school teachers in support of college attendance. In addition, after year one, students reported that the academy high school teachers were instrumental in their

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academic success. As a result, the role of these high school teachers was expanded.

Create learning communities: Brock (2010) and Kuh, Cruce, Shoup, Kinzie and Gonyea (2008) recommended learning communities as successful pedagogical approaches for sustaining and supporting freshman college students, and minority students, in particular. The academies' problem-based learning approach and the creation of small teams created learning communities that stressed cooperative learning over competition.

Select and employ peer mentors: Experts on college student retention report that students who leave college often feel overwhelmed with the demands of college and have unrealistic expectations (Noel, Levitz, & Saluri, 1985). Kahn and Nauta (2001) found that college students benefit when they get help in clarifying the college's expectations of them. The peer mentors were able to get this adjustment process started early for the CSI academy participants.

Introduce students to different campuses: Programs that allow students to experience different types of campuses help them to select colleges where they are more likely to persist. Finding the "right" college contributes to retaining students (Allen, 1992). Knowing this, we purposely did not emphasize the liberal arts college over the university. We also did not ask students which they preferred. We listened to their comments, however, and helped them discern the ways in which the campuses could meet different students' needs.

Foster student engagement: Research as far back as the 1970's has shown that positive student interactions with faculty members, supportive classmates, peer mentors and college staff contribute to student success (Tinto, 1993). Campus programs for high school students can mirror these engagement practices and give students a chance to experience the kind of supportive environment that would sustain them in their college years.

Encourage early academic success: The successful completion of a college course, on a college campus, was a

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confidence booster for the academy students. Parent surveys conducted at the banquet consistently reflected this observation. Since many academy students came with no experience in “advanced placement” or accelerated programs, their academy accomplishments contributed to a sense of efficacy in science study. This confidence from early science course success can be key to students’ success in college science programs (Russell & Atwater, 2005).

Follow-Up and Conclusion

The academy leaders have been monitoring the participants for the past two years. In the latest survey, Spring of 2011, responses were received from 28 participants, four of whom were still in high school. Of those 24 high school graduates, all were attending college, with 20 studying in science, including one preparing to be a teacher. The remaining four reported following a criminal justice program.

While funding for the two-week academies ended in 2009-10, one-day mini-academies are being held with carry over funds. Science teachers from 25 school districts are being invited to bring two students of their choice to campus, with the direction to select students from under-represented groups who have unrealized potential. In the spirit of barrier-removal that marked the original academies, districts are reimbursed for substitute teacher costs, opening up the program to students, regardless of their schools’ financial status.

Upon reflection, it is clear that teacher educators in small colleges are uniquely positioned to lead collaborative programs that bring high school students to campus. Their educational expertise, along with community, school and campus connections, provides the foundational background for successful programs. It is hoped that others will find inspiration in the success of the CSI academies and look to establish their own problem-based learning programs that

encourage diverse young people to enter into challenging, high demand careers, including those in teaching.

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**“When Teachers Collaborate, Good Things Happen”:
Teacher Candidate Perspectives of the Co-Teach
Model for the Student Teaching Internship**

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Abstract

The current demand for teacher candidates to prove a positive impact on student achievement and work collaboratively in a field that is perennially in change has called for a new paradigm for teacher preparation, one that focuses on clinical field experiences, culturally responsive teaching and reflective, collaborative pedagogy. The co-teach model for student teaching offers improved student learning by allowing for differentiated approaches to instruction and establishing communication practices necessary for professional collaboration. While research has shown that the co-teach model for the student teaching internship yields improved learning for the students in the classroom, less focus has been placed on the teacher candidates' perceptions of the model for the student teaching internship. In this paper, brief historical perspectives of teacher preparation and the co-teach model of the student teaching internship are followed by teacher candidates' and administrators' perceptions of

co-teaching. Finally, lessons learned and suggestions for implementation are provided.

Introduction

While it often seems that all aspects of teacher education programs are in constant flux, the model for apprenticeship, the student teaching internship, has remained relatively intact in recent decades. However, legislature, policy shifts, national and state emphasis on assessment and the schools and the students they serve themselves have changed dramatically. No longer does the traditional model of student teaching best meet the needs of the teacher candidate, mentor teacher and students within the classroom.

The current demand for teacher candidates to prove a positive impact on student achievement (outcome-based and value-added) and to work collaboratively in a field that is perennially in change has called for a new paradigm for teacher preparation, one that focuses on clinical field experiences, culturally responsive teaching and reflective, collaborative pedagogy. The co-teaching model for student teaching offers improved student learning by allowing for differentiated approaches to instruction and by establishing communication practices necessary for true, life-long professional collaboration. While research has shown that the co-teach model for the student teaching internship yields improved learning for the students in the classroom (Bacharach, Heck & Dahlberg, 2010), less focus has been placed on the teacher candidates' perceptions of the co-teach model for the student teaching internship. Furthermore, the characteristics of co-teaching are supportive of liberal arts teacher education, highlighting the importance of focusing on the diversity of students, creating a caring learning environment and partnering with professionals in the field to foster an effective classroom for all. In this paper, brief historical perspectives of teacher

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preparation and the co-teach model of the student teaching internship are followed by survey results of teacher candidates' and administrators' perceptions of co-teaching. Finally, lessons learned and suggestions for implementation are provided.

Historical Perspective of Teacher Preparation

In its early form, teacher preparation in the United States was simply teacher experience. Teachers were, for the most part, educated itinerant men in route to other places and other jobs. Later, once primers and training programs developed, teacher preparation became about evaluating content knowledge and identifying moral characteristics. For decades, teachers were prepared to “know and to understand” the material they would teach, to become the content experts but not necessarily expert-practitioners (Fraser, 2007). During the Progressivist movement, a focus on student-centered pedagogy changed the relationships among the teacher, the content taught and the student. Adopting Dewey's (1902) philosophy of the learner, a new focus on constructivism and socio-emotional development radicalized teacher preparation and introduced the laboratory school model—a model that emphasized teacher preparation as teacher-practice. It is around this time that teacher education became a recognized field for professional training in higher education (Fraser, 2007). Though much has changed in teacher preparation in the last 50 years, the emphasis on clinical field experience is a component that distinguishes quality programs.

What has the student teaching field experience looked like for teacher candidates, for their students and for the cooperating teachers with whom they have been partnered? The model has always been one of apprenticeship (Fraser, 2007). The question of whether the teacher candidate could “do the job” has been the driving force for student teaching

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internships. Often the case was that the cooperating mentor teacher was advised to let the teacher candidate “dive right in,” as early as the first day “on the job,” and take over as the primary teacher in the classroom. This seems a logical approach to determine whether that person could, in fact, “do the job.” Often labeled the “sink or swim” approach, the teacher candidates either failed horribly (sunk) or figured out how to survive quickly (swam). This would be like asking a journeyman electrician to rewire a house in his or her first job or a mechanic to reconstruct an engine without a manual—and with little assistance!

While some in teacher preparation still advocate this internship method, there are at least three glaring problems with its practice. First, some cooperating mentor teachers are uncomfortable leaving their classrooms to a novice teacher before that individual has proven an ability to teach. The accountability movement prevalent across the country demands high student achievement from all classrooms, often linking scores to the teacher without noting if he or she had a teacher candidate that year. As such, highly qualified cooperating teachers often opt not to mentor teacher candidates.

The second problem with the traditional model is that it does not prepare teacher candidates to become collaborative practitioners. In fact, the model leads to many otherwise well-prepared teachers who, “shut the classroom door to the outside world” and do not view their profession as a collaborative one. Why would they? Their apprenticeship and first exposure to the profession was a solo one.

Lastly, as one might suspect, just as a novice electrician rewiring a house solo might not be as effective as a master and apprentice rewiring the house together, so too is the novice teacher not as effective as the veteran instructor in positively impacting student achievement during the student teaching internship. Perhaps the greatest problem with the “sink or swim” approach is that the master (teacher) is mostly an observer and not a collaborative participant in the

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apprenticeship of the teacher candidate and in the educating of the students in his or her classroom. It is evident that the traditional internship model is not one which embraces and fosters the integrative and collaborative traits of a liberally educated teacher.

Co-Teaching in the Student Teaching Internship

Historically, the model for co-teaching can be traced back to its roots in the field of special education. Pioneers of the practice, Dr. Marilyn Friend and Dr. Lynne Cook (1995), proposed co-teaching as an effective means for providing services to students with special needs within the inclusive general education classroom. In this context, co-teaching is defined as, “the collaboration between general and special education teachers for all of the teaching responsibilities of all students assigned to a classroom” (Gately & Gately, 2001, p. 41). The special educator serves as a type of itinerant teacher moving from classroom to classroom providing specialized instruction to students who qualify for special education services. Utilizing this delivery model, researchers found that special educators could effectively co-teach in four-to-six different classrooms on a regular basis (Cook, 2004).

As it applies to the general education setting, co-teaching is different from the original special education model in that the partnership is not confined to the pairing of a general educator with a special educator. This approach can be used by any adults who are charged with the instruction of students in a classroom setting: teacher candidates, educational specialists, para-professionals and classroom volunteers.

Although the original focus of co-teaching was on serving students with special needs in inclusive settings, according to the literature many critical components of the co-teach model transfer well to the general classroom and the preparation of all teacher candidates. Regardless of the classroom demographic,

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“At the core of co-teaching is determining what instructional techniques will be most efficient and effective in helping all students meet academic standards” (Murawski & Dieker, 2004, p. 55). In both cases, the emphasis is on shared ownership for learning. Effective co-teaching also requires communication and collaboration on the multiple tasks comprising the learning process: planning, instruction, assessment and management (Cook, 2004; Cook & Friend, 1995; Gately & Gately, 2001; Murawski & Dieker, 2004; St. Cloud State University College of Education, 2010). To this end, many researchers cite the importance of designating time for shared planning and communication as well as the value of attending to these critical processes.

Research suggests that a co-teaching-based student teaching internship yields benefits for all involved: students, mentors and teacher candidates. In a five-year study conducted by Saint Cloud State University, researchers compared the standardized math and reading scores of elementary, middle and high school students placed in settings in which the traditional student teaching model was used to those of students in classrooms where the co-teaching model had been implemented. The results indicated that students’ academic achievement in a co-taught classroom surpassed that of peers placed in classrooms using a traditional student teaching model. Surprisingly, their performance also surpassed that of students placed in a classroom where there was no student teacher (Bacharach, Heck & Dahlberg, 2010). This study clearly demonstrates the benefits to students, an essential consideration in this era of high-stakes teacher accountability.

Two additional advantages to a true co-teaching setting are that the student-to-teacher ratio is greatly reduced, and two significantly different perspectives are represented (Cook, 2004). This approach is different from other practices historically associated with the term *team-teaching* and often employed during a traditional student teaching internship, such as teachers taking turns teaching subject matter to the same

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group of students, planning interdisciplinary lessons yet delivering instruction independently and having one partner teach while the other attends to paperwork or other administrative tasks that support the learning event. With both co-teachers physically present in the instructional activities, the students' learning experience is enriched.

As stated earlier, students are not the only people who benefit from the co-teach model. Due to the increased focus on partnering, mentors and teacher candidates alike grow in their capacity to communicate clearly and collaborate effectively (Brownell and Walther-Thomas, 2002 as cited in Bacharach, 2007). During training sessions, pairs of mentors and teacher candidates engage in proactive communication activities aimed at increasing comfort levels and mutual understanding of each other's personal and professional strengths and styles, which in turn sets the stage for successful partnerships. According to Gately and Gately (2001), partners who function at the *collaborative stage* are able to model effective verbal and nonverbal communication skills for their students.

Additionally, the literature suggests the use of co-teaching during the internship experience is a more efficient use of a teacher candidate's time. Rather than spend countless hours observing the classroom at the start of the internship, co-teaching candidates have a clearly identified purpose when placed in an observational or assistive role. Teacher candidates also learn to utilize all adults within the classroom to the benefit of the learners. As aptly stated by one mentor teacher, "Teaching is no longer a solo job so learning how to delegate and use your resources is so essential" (Bacharach, 2007).

A final and compelling benefit cited in the co-teach literature is the opportunity for co-teachers to participate in simultaneous renewal because the collaborative nature of co-teaching encourages a mutual exchange of knowledge and skills among partners. Cook and Friend (1995) purport that, "Teachers involved in collaborative partnerships often report

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increased feelings of worth, renewal, partnership, and creativity” (as cited in Gately and Gately, 2001, p. 40).

In spite of mutual agreement on many of the essential components and benefits of co-teaching as presented in the literature, the co-teaching model can be defined and implemented in a variety of ways. As referenced in this study, co-teaching is defined as the practice of “two teachers working together with groups of students and sharing the planning, organization, delivery and assessment of instruction as well as the physical space” (St. Cloud State University College of Education, 2010). The pre-service preparation practices implemented in this case were based on the model developed by the Teacher Quality Enhancement office of St. Cloud State University in Minnesota which stresses three main components: a focus on communication processes among partners, delivery of instruction using seven key co-teach strategies and the intentional devotion of time to co-planning on a regular basis. The seven co-teaching instructional strategies, adapted from the work of Marilyn Friend and Lynne Cook (1992), are defined as:

- ***One Teach, One Observe*** is defined as one teacher leading the lesson while the other watches specifically for either a teaching technique or student evidence.
- ***One Teach, One Assist*** works in a similar fashion to *One Teach, One Observe*, but the assistant’s role is to intentionally work with specific students or in a predetermined role.
- ***Station Teaching*** is designed for both teachers to teach different but related content to the students in small groups in a rotating cycle.
- ***Parallel Teaching*** occurs when each co-teacher teaches the same lesson to a smaller group of students at the same time.

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- *Supplemental Teaching* is designed for one teacher to instruct the students at grade level; the other teacher works with those who need extension or remediation.
- *Alternative or Differentiated Teaching* occurs when both teachers present the same information to a group of students, utilizing different instructional strategies to meet the same learning goals.
- *Team Teaching* is defined as both teachers equally participating in all aspects of the lesson.

One University's Approach: Teacher Candidate Perceptions of the Co-Teaching Model

A conscious decision to implement the co-teaching model in the student teaching internship was made by Whitworth University in Spokane, Washington, in the spring of 2009. Program facilitators and candidates found the co-teaching model to have natural connections to the liberal arts curriculum candidates had already experienced. Previous candidate coursework examined the practice of teaching through the lens of how effective teachers share similar dispositional characteristics exemplified by the co-teaching model. This includes the value of interdisciplinary scholarship and research-based professional practice and development, the importance of community-membership as participatory, the need for collaboration across grade levels and subject areas and a servant-leader's heart. These dispositions are a part of the concept of "calling or vocation," which is a thread unifying much of the liberal arts curriculum at Whitworth University. In addition to their coursework in education, candidates are prepared through interdisciplinary classes aimed at freeing both the power of the intellectual "mind" through general areas of knowledge and study, and the freeing of the "heart" through the examination and practice of service aimed at social justice.

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The co-teaching model is at its essence a collaborative practice aimed at improving student learning and, thus, the best model for liberally educated student teachers of both mind and heart.

All three of Whitworth University's teacher education programs (traditional undergraduate, thirteen-month accelerated Master in Teaching and an alternative teacher certification program for working adults) participated in the transition to the co-teach model for the student teaching internship and the assessment of this model. The University trained its teacher candidates and their mentor teachers in the co-teaching strategies using a blend of formats. A joint pairs training was done with all programs. Each program provided additional training for candidates through coursework. At the end of each semester, from spring 2010 through spring 2011, the teacher candidates finishing their student teaching internship in a K-12 classroom were surveyed to determine their support of the co-teaching model for professional training and perceived benefits for student learning. Teacher candidates were asked to respond with the ranking: (1) strongly disagree, (2) somewhat disagree, (3) somewhat agree or (4) strongly agree to each question and to provide a written explanation for their numerical score. They were also asked for suggestions in regards to better preparing candidates and mentor teachers in the future. One hundred and fifty-six teacher candidates responded to the survey. Overall, the reaction to the co-teaching model in the student teaching internship was affirming of perceived benefits to students, teacher candidates and mentor teachers (see Table 1).

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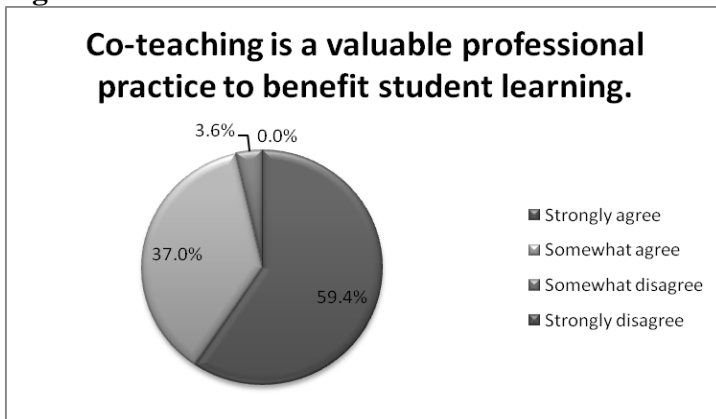
Rating	Co-teaching is a valuable professional practice to benefit student learning.	Co-teaching is a valuable professional practice to benefit the teacher candidate's professional training.	I feel adequately prepared to implement co-teaching in my classroom this year.
Strongly agree	93 (59.4%)	76 (48.6%)	74 (47.8%)
Somewhat agree	58 (37.0%)	69 (44.2%)	58 (37.0%)
Somewhat disagree	5 (3.6%)	10 (6.5%)	23 (14.5%)
Strongly disagree	0 (0.0%)	1 (0.7%)	1 (0.7%)

n = 156

“When Teachers Collaborate, Good Things Happen.”

The first survey question asked teacher candidates, “Is co-teaching a valuable professional practice to benefit student learning? Why?” Over 96% of the respondents agreed that co-teaching is a valuable practice that has positive learning implications for students (see Figure 1).

Figure 1



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When consolidating and analyzing teacher candidates' responses to the "Why," component of this survey question, three main themes emerged: Smaller teacher-to-student ratios lead to more opportunities for differentiated instruction; two different perspectives and teaching styles are offered to students; and the transition and classroom management is smoother for both teachers and students in the classroom.

Of the 106 students who provided written explanations to this question, 69 (65%) teacher candidates said that they found that co-teaching allowed for lower teacher-student ratios, more differentiated, individualized instruction and more opportunities for students to work in small groups. Said one teacher candidate, "Co-teaching is a valuable professional practice to benefit student learning because of opportunities for differentiation. More attention and love can be communicated to students while meeting their multiple learning styles." Another responded, "RTI is instantly possible with two teachers in the classroom!" A third explained, "There is power in numbers—more teachers to fewer kids adds quality to instruction."

Similarly, 36 (34%) teacher candidates expressed that the co-teach model for the student teaching internship let the students in the classroom hear different perspectives and learn from different teaching styles. Explained one teacher candidate, "Different students relate differently to teachers and forms of learning. Therefore, if teachers can accurately implement co-teaching then it can greatly affect students' connection to the curriculum." Another commented, "Students can learn more when the information is presented in two different ways by two different teachers." Said another, "Students get 'twice' the teacher—the experience and knowledge of the mentor and the excitement and innovation of the teacher candidate."

Finally, a smoother transition for the students and teacher candidate, as well as easier and consistent classroom management, was cited by 18 (17%) teacher candidates. One

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stated, “Student teachers have the opportunity to teach students and curriculum while the classroom teacher still has the control of the classroom. It makes the teacher candidate assimilate more easily to the classroom and role of teacher and is an easier transition for the students.”

As to be expected with a sample of 156 respondents (106 comments), not all of the comments were completely in support of the co-teaching model of student teaching. However, only eleven (10%) of the teacher candidates provided unsure, slightly negative or negative responses. For example, eight (3.8%) teacher candidates said that co-teaching is not practical because they will never have the opportunity to co-teach again. Explained one, “If there are two teachers in the room, students have the benefit of two minds helping them learn; however, there are not often two teachers in the room during the rest of their regular instruction.” Another said, “It is great for students to have two teachers caring for them, but not usually realistic.”

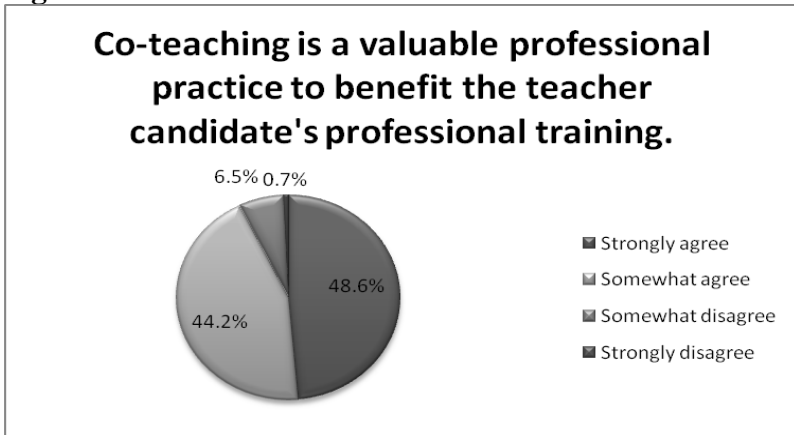
Likewise, five (4.7%) teacher candidates said they thought having two teachers was confusing for the students. One wrote, “Students will receive twice the help but may become confused about who is teaching.” Similarly, another teacher candidate said, “I feel like when implemented only so-so or poorly, co-teaching can be confusing for students. Done well, it can be good.”

Finally, always emerging as a concern regarding co-teaching is the question of whether or not the teacher candidate will be prepared to teach alone in his or her future classroom. In this survey, only two (1.9%) teacher candidates indicated that they felt they were not prepared to teach on their own. Explained one teacher candidate, “I think you need to be completely on your own as well, because they won’t be there in the future.”

The second question on the survey asked teacher candidates if, “Co-teaching is a valuable professional practice to benefit

the teacher candidate’s professional training.” The responses to this question were also favorable (see Figure 2).

Figure 2



Of the 156 respondents, 76 (48.6%) indicated that they strongly agreed with the statement, while 69 (44.2%) said they somewhat agreed. In fact, only 10 (6.5%) teacher candidates stated they somewhat disagreed, with only one (.07%) marking “strongly disagree” to the prompt. The trends of the responses in support of the co-teaching model reflected the ease of transition into full-time student teaching, the importance of seeing strategies modeled and learning through increased collaboration. The concerns voiced in response to this prompt were similar to those of the first survey question.

Teacher candidates are not alone in their support of the co-teach model. School administrators in many of the districts where teacher candidates are placed have been very supportive of the co-teaching model for the student teaching internship. When asked the same question, “Do you feel co-teaching is a valuable professional practice to benefit the teacher candidate’s professional training?” one administrator responded:

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I believe it is important that student teachers are supported as they begin working in the field. I believe co-teaching provides more support than the traditional solo teaching experience. It also helps teacher candidates to better understand the value of working with one's colleagues, para-educators or parent volunteers—and provides a model for how students can benefit from having two adults present in the classroom. It is imperative that teachers new to the profession understand the level of collaboration expected of educators. In our district teachers collaborate every Friday; they review student work and share ideas about instructional practices that have made a difference in student achievement. In our middle school classrooms teachers often co-teach lessons; therefore, it is important for teacher candidates to understand that the adult relationships in the school are critical to helping all students achieve success. In our middle and high schools we have inclusion classrooms in math, science, and language arts—in those classrooms general education and special education teachers work together every day. (D. Clemens, personal communication, January 19, 2011)

The necessity of a collaborative approach to the student teaching internship was echoed by another administrator who explained, “The opportunity to work side-by-side with an experienced teacher is much more valuable than the trial and error that often occurs when teacher candidates are on their own. The modeling and coaching consistently provided by the mentor teachers create a valuable learning experience” (J. Beauchamp, personal communication, December 1, 2010).

With support from the university professors, district administrators, mentor teachers and teacher candidates themselves, coupled with increased opportunities for student

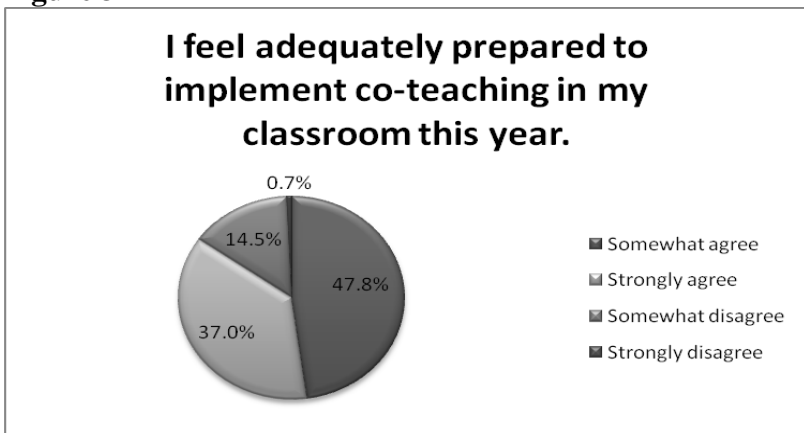
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learning, the co-teach model of the student teaching internship seems to be not just a logical choice for the liberal arts trained educator, but a necessary switch from the traditional model of student teaching.

Lessons Learned

The potential for the co-teaching model in the student teaching internship to positively impact student learning and professional training is great. The overwhelming majority of the teacher candidates surveyed felt that they were prepared to co-teach (see Figure 3) and that it was a positive powerful experience for both teachers' professional practice and student learning in the classroom (see Figures 1 and 2). However, as with any change or new initiative, lessons have been learned regarding how to improve the implementation of the model. Through feedback from teacher candidates, mentor teachers, administrators and university faculty members, several trends emerged regarding key points for change.

Figure 3



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Positive Mentor Matches Are Necessary

The success of any relationship is built on trust, mutual respect and clear communication. Teacher candidates who were not compatible with their mentor teacher (as evidenced through journal entries, discussions with their professors and supervisors, as well as responses to this survey) were more likely to have a negative experience of the internship in general. As such, developing a positive working relationship by establishing clear lines of communication at the outset is critical. Expectations need to be explicitly outlined, collaborative planning times established and procedures clarified. When this is done from day one, there is far less confusion and fewer breakdowns in communication. In addition, carefully matching teacher candidates with mentor teachers is helpful in ensuring a positive experience. There are many wonderful mentor teachers and teacher candidates in every cohort; however, they don't always match positively with one another due to personality or other philosophical differences. It has also helped to send the teacher candidate to the mentor teacher's classroom in advance to have an informal interview. Although time consuming, these extra steps are appreciated by both parties because they help to establish a line of communication prior to the start of the internship. Then, if either person does not feel the match will work, there is time to find an alternative placement for both before it even starts, saving a great deal of time and frustration for everyone involved.

Have the Same Mentor for as Long as Possible

Relationships take time to build, as does an understanding of the complex system of an individual's classroom. Efforts have been made to keep teacher candidates in all three teacher preparation programs with the same mentor

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teacher for the majority of practicum experiences. A year in the same classroom yields a greater understanding of student needs and the trajectory of growth in that time frame. Teacher candidates also benefit from mastering a management system and collaboratively planning for an extended period of time. When the teacher candidate and mentor teacher are comfortable with one another, frustrations like those reported above in Table 1 are less likely to occur. Finally, the teacher candidate and mentor teacher have a greater chance of establishing a positive relationship with strong communication if the relationship is a long one.

Training Together

The pairs (teacher candidate and mentor teacher) co-teach training focuses on establishing a clear understanding of one another professionally and personally, as well as a description of and introduction to the co-teaching strategies. In both the survey responses and anecdotal data, pairs agreed that the co-teach training time to plan and learn together was very beneficial in building their relationship and planning instruction around each other's strengths and preferences. This structured training time is helpful for a shared vision of what co-teaching can look like in individual classrooms and for individual lessons. Additionally, training together provides time out of the school to collaborate and focus on building the pair's relationship, as mentioned previously, a critical aspect for a successful co-teaching experience.

Introducing Co-Teaching Early in the Practicum Experiences

Co-teaching does not need to occur only in the full-time student-teaching internship. The model can be effectively used

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throughout all practicum experiences to gradually introduce teacher candidates into teaching responsibilities and to teach the strategies. Each co-teaching strategy can be introduced into coursework early on in the teacher preparation program. Then, by the time the teacher candidate enters the student-teaching internship, all strategies are understood and can be incorporated into the planning, utilizing, as survey respondents indicated, a wider variety of teaching strategies, perspectives and styles within the classroom. For example, in a class on differentiated instruction, the strategies Supplemental Teaching, Alternative Teaching and Station Teaching can be taught and incorporated into assignments that require teacher candidates to both plan for and practice these approaches in their practicum classroom, building upon the unique pedagogical strengths of each teacher and appealing to the unique learning needs and styles of their students. This approach not only reinforces the strategies, but also the collaborative approach to utilizing all adults in the classroom. This early introduction to co-teaching may be one reason why the teacher candidates felt so prepared to implement co-teaching in their student teaching internship and/or future classrooms (see Figure 3).

Outline the Student Teaching Internship Requirements Clearly

Mentor teachers and teacher candidates still need to know what the expectations are from the university in regards to phasing teacher candidates into the primary role in the classroom. Although the expectation in the co-teaching model is that the mentor teacher will stay involved in classroom activities to some degree throughout the experience, there is a definitive shift in roles from the mentor teacher being the primary planner and instructor to the teacher candidate taking over this role. While few teacher candidates indicated negative

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opinions about their co-teach experience, most frustrations revolved around a lack of communication between teacher candidate and mentor teacher, as well as confusion regarding each teacher's expected role during the internship. Clearly outlining when and how this can take place helps the pair move more seamlessly through the experience while ensuring the teacher candidate does still solo teach.

Conclusion

The accountability era of No Child Left Behind has changed many things in the world of education, and teacher preparation has not gone untouched. Placements have become more difficult to make in schools that are feeling pressured to meet Annual Yearly Progress and adhere to standardized curricula. Teachers feel under the gun with evaluation systems that tie student performance to merit pay or even their jobs. Tracking student data has also revealed that having teacher candidates in the traditional student teaching model can negatively impact student achievement (Bacharach, Heck & Dahlberg, 2010). As one administrator who had also tracked student achievement with similar results said at a co-teaching training, "Once you have the data to show that something is negatively impacting your students, you have no choice but to change." Policy and legislative changes and mandates have provided the opportunity to relook at structures that have been in place for a long time and that are no longer working in order to find a better solution. Co-teaching not only prepares teacher candidates in a true apprenticeship model, it prepares them for the collaborative environment in schools today and shows them how to utilize more than one adult in the classroom to improve student achievement. It's a new type of value-added approach to accountability. As schools and districts are being asked to do more with less, co-teaching appears to be a positive approach to providing quality instruction for students as well as

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quality professional development for both pre-service and in-service teachers. And with the support and buy-in of the teacher candidates themselves, it seems worth the effort to explore this opportunity for collaborative growth and student learning.

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