Middle school teachers' implementation of differentiated instruction: the complexity

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MIDDLE SCHOOL TEACHERS' IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION: THE COMPLEXITY

An Abstract of a Thesis
Submitted
in Partial Fulfillment
of the Requirements for the Degree
Specialist in Education

Tonya Rae Vitense (Keefer)
University of Northern Iowa
May 2010
ABSTRACT

The needs of students in American schools are increasingly more varied as the school population becomes more diverse. Ensuring that all students receive access to an appropriate education becomes vital to our future. Differentiated instruction has been suggested as one way to provide that access. Differentiated instruction does this by using planning that explicitly addresses students’ diverse interests, learning preferences, and abilities. There is plentiful information on what differentiated instruction is and what it looks like in the classroom, but there is little research on the process of teachers implementing differentiated instruction. Over a seven-month period, this research sought to understand how a small group of middle school teachers in the Midwest approached the process of implementing differentiated instruction. Through surveys, bimonthly team meetings, interviews, and observations the researcher gathered data from these middle school teachers as they discussed, planned, and experimented with implementing differentiated instruction in their various classrooms. Students’ attitudes and feelings toward school were also examined in order to provide corollary data and to incorporate the voices of those who were receiving the differentiated instruction. The themes that emerged from the data were transparency, grading, and self-efficacy. These themes and their implications for professional development related to differentiated instruction were explored.
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THE COMPLEXITY

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Tonya Rae Vitense (Keefer)
University of Northern Iowa
May 2010
This Study by: Tonya Rae Keefer

Entitled: MIDDLE SCHOOL TEACHERS’ IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION: THE COMPLEXITY

has been approved as meeting the thesis requirement for the

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CHAPTER 1
INTRODUCTION

The observation that American schools are becoming more diverse is evident throughout education literature (Cassady et al., 2004; Lasley & Matcsynski, 1997; Sapon-Shevin, 2001; van Garderen & Whittaker, 2006). Schools are filled with diverse learners; students identified with special needs, English language learners (Allison & Rehm, 2007), gifted and advanced students, students of diverse cultures, students of various economic backgrounds, students with behavioral issues, motivated and unmotivated students, students with various family structures and support systems, individuals that fit more than one of these categories, and students with other unique situations and backgrounds (George, 2005; Sapon-Shevin; Tomlinson, 2005b; Tomlinson & Allan, 2000; Tomlinson et al., 2003). For purposes of this study, it would be relevant to point out that middle schools as a whole often accommodate students with a diverse range of developmental, social, emotional, and physical needs (Brighton, 2003; Hertberg-Davis & Brighton, 2006).

In addition to this recognition of diverse classrooms, No Child Left Behind (NCLB; Elementary and Secondary Education Act, 2001, as cited in Hoover & Patton, 2004) legislation requires that schools assist all students in meeting state proficiency standards (Hoover & Patton) through access to the general curriculum (Broderick, Mehta-Parekh, & Reid, 2005; Spooner, Dymond, Smith, & Kennedy, 2006). Every student in the public school system in the U.S. is guaranteed the right of access to the general curriculum (Fletcher, Bos, & Johnson, 1999; Lawrence-Brown, 2004).

One goal of education in the U.S. is to recognize and support student diversity in order to advance the knowledge and skills of each individual (Tomlinson, 2000). In order to better meet the needs of diverse students, teachers must use teaching practices that allow all students to have access to the curriculum, classroom lessons, classroom activities, and classroom assessments. Overall, teachers and schools are being held responsible for ensuring that all of their students are reaching these standards (Hoover & Patton, 2004). Each student must meet state proficiency, regardless of the student’s level of need, requiring schools to find ways to make this possible. Teaching the same lesson in the same way to students that differ in numerous ways is no longer considered appropriate (Broderick et al., 2005; Sapon-Shevin, 2001; Schumm et al., 1995; Tomlinson, 2005a).
Differentiated Instruction

Differentiated instruction (DI) is a teaching strategy that addresses issues and incorporates the types of activities that allow all students "equity of access to high quality learning" (Tomlinson et al., 2003, p. 120). The literature expresses different ways of defining DI. This is discussed further in the accompanying literature review.

The following definition of DI will be applied for this paper and accompanying study: DI is "ensuring that what a student learns, how he or she learns it, and how the student demonstrates what he or she has learned is a match for that student's readiness level, interests, and preferred mode of learning" (Tomlinson, 2004b, p. 188). This definition allows one to break DI down according to content, process, and product, which can be adapted in accordance with students' readiness levels, interests, and preferences. These various practices or components of DI can then be implemented in the classroom deliberately and strategically, as suggested in the literature (Tomlinson, 1999b).

Rationale and Purpose

The literature surrounding DI addresses important definitions, key components, suggestions on how to begin and foster implementation, and the frequency of its use. However, there appears to be a missing link in the literature regarding teachers' personal experiences utilizing DI, student accounts and experiences with DI, and empirical evidence in support of DI. Tomlinson and Allan (2000) propose that the field needs more personal accounts of the positives and negatives when it comes to implementing DI. Tomlinson (2005a) adds that practices that lead to positive student attitudes with regards to learning deserve attention, as they help establish students' commitment to education.

First, it is important to understand the personal accounts of those who have and are currently implementing DI. This information may lead to valuable insights on how to foster teachers' use of DI and how to make it both possible and successful. Second, students' thoughts and opinions on DI could provide teachers and researchers with valuable information regarding DI. The students are the recipients of DI efforts so measuring and incorporating their feelings and understandings of DI practices could provide useful data. Additionally, correlating student attitudes towards school with the presence of DI may present validation of the effects of DI. Finally, current education standards expect educators to utilize evidenced-
based practices that have been proven effective (Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007). If proponents of DI want school leaders advocating for these practices, they must find reliable ways to measure effectiveness.

This study incorporated qualitative methods in order to provide some of this missing data. Three major questions were explored: (a) How did the teachers acknowledge DI and its approach to addressing student diversity? (b) What concerns or issues developed as DI was discussed and implemented? (c) How did the teachers’ choices in differentiation align with their students’ perceptions of school and school practices? In order to investigate these questions, I provided a group of four, eighth grade, core classroom teachers with a short presentation on DI and then worked closely with them as they worked to implement DI practices into their classrooms over a seven-month period. I facilitated bimonthly team meetings, surveyed teachers and students, observed classrooms, and interviewed teachers and students. Gathering information from these activities provided qualitative data regarding the teachers’ personal experiences with DI implementation and corollary student data. Future studies will want to examine ways of measuring the effectiveness of DI empirically.

Summary

The current DI literature base lacks information regarding teachers’ personal experiences implementing DI and corollary student data. This study incorporated a qualitative approach to begin filling some of these gaps by tracking the experiences of four, eighth grade teachers as they worked to implement DI in their classrooms. Student data was collected in order to corroborate and expand the teacher data. The information collected provided qualitative data regarding teachers’ personal experiences with DI implementation and corollary student data.
CHAPTER 2

REVIEW OF THE LITERATURE

DI is an approach that can be included in classroom practices to support diverse learners (Tomlinson, 2005b; Tomlinson & Allan, 2000; van Garderen & Whittaker, 2006). The following literature review begins with defining DI including what it is and the theories that support it. Current teacher practice is examined, and a review of the literature on professional development, in general and as it relates to DI, is provided.

What is Differentiated Instruction?

Tomlinson (1999b), likely the most prominent name attached to DI, writes of a young teacher examining the meaning behind DI. The woman responds, “Differentiated instruction isn’t a strategy. Its a way of thinking about all you do when you teach and all that the kids do when they learn” (p. 96). Tomlinson agrees with the statement and recommends that DI begin with a reflection of one’s personal teaching and learning philosophies. This philosophy then leads one to question, strengthen, revamp, create, and/or remove specific instructional and learning strategies. Tomlinson (2000) describes DI as a “way of thinking about teaching and learning” and a “philosophy…based on a set of beliefs” (p. 6). A description of DI as a philosophy is emphasized in many of her articles (Tomlinson, 2005a). Hall, Strangman, and Meyer (2003) further assert that “DI is an instructional process…offering teachers a means to provide instruction to a range of students in today’s classroom situations” (p. 6). Burggraf (2004) also calls DI a “process to teaching and learning” (p. 1). This suggests that DI is a teaching philosophy and an approach to planning with strategies and techniques that are designed to address the diverse characteristics of every student in the classroom.

Tomlinson (as cited in Hertberg-Davis & Brighton, 2006) adds that DI is the teacher’s response to student diversity. In other words, teachers can differentiate content, process, and product to address the diversity in student interest, readiness, and learning preference. What a student learns, how that information is provided, and how the student’s learning is assessed can be varied according to his or her interests, learning preferences, and readiness levels. This helps to ensure that the student gets what he or she needs to learn.
Benjamin (2006) asserts that “DI is a practice that grows out of certain values that are important in the way that we treat our students, design our curricula, establish rules, and talk about learning” (p. 57). Hall et al., (2003) establish DI as a “compilation of many theories and practices… rooted in years of educational theory and research” (p. 5). Broderick et al. (2005) see DI not as a method, but as “a way of doing business in classrooms, based on the belief that all students can learn and succeed” (p.197).

Although researchers of DI describe it in various ways, all contend that DI allows a teacher to address the diverse needs of students in the classroom. Whether it is a philosophy, a process, a thought pattern, a response, a practice, a compilation, or a way of doing business, DI’s main contribution is to support every student in the classroom so that all succeed.

Theories Underlying Differentiated Instruction

Student success in a differentiated classroom is encouraged through the various theories DI incorporates (Anderson, 2007; Tomlinson & Allan, 2000) and endorses. Roeser and Eccles (1998) found positive student perceptions of school to be significant predictors of academic achievement. Further, research contends that student choice, interest, appropriate challenge, and enjoyment lead to motivation. Motivation in turn leads to engagement and engagement in school has been linked to achievement and success (Gentry & Gable, 2001).

Research on appropriately challenging students or incorporating their readiness levels supports DI (Tomlinson & Allan, 2000; Tomlinson et al., 2003). Appropriate challenge links to Vygotsky’s zone of proximal development (Edwards, Carr, & Siegel, 2006; Vygotsky, 1978). A person’s zone of proximal development is the distance between the knowledge and skills a person has mastered and the potential skills and knowledge that a person can master with proper support (Vygotsky). Research acknowledges that a student learns best when teachers respond within his or her zone of proximal development, impelling him or her to work slightly beyond where he or she can work without support and assistance (Akos, Cockman, & Strickland, 2007; Tomlinson, 2000).

According to Tomlinson and Allan (2000) and Tomlinson et al. (2003), brain research demonstrates that students should be moderately challenged for maximum growth and learning. Simple tasks do not lead to learning, yet tasks that are too difficult create frustration and lead to a lack in
motivation. Whole group lessons that teach each student the same way most likely do not meet all students at their zone of proximal development (Edwards et al., 2006; Tomlinson & Allan; Tomlinson et al.).

Additionally, Tomlinson (1999a) contends that brain research reveals that humans also gain more knowledge when the information taught is relevant, interesting, and carries personal meaning. Cummins (as cited in Southern Region Education Board [SREB], n.d.) and Willig (as cited in SREB, n.d.) found that “the extent to which students’ own interests are incorporated into the school program appears to be significantly related to their academic success” (p. 7). Further, incorporating student choice, a feature of DI, encourages students to choose activities and topics that are of interest and enjoyment to them (Akos et al., 2007; Anderson, 2007; Benjamin, 2006; Dunlap et al., 1994; George, 2005; Lewis & Batts, 2005; Rademacher, Cowart, Sparks, & Chism, 1997). Thus, research proposes that challenge, interest, enjoyment, and choice promote motivation.

Deci and Ryan (1985) and Schiefele (1991) highlight the correlation between motivation and achievement. Motivation research highlights the importance of creating activities and lessons that are meaningful (Nichols & Berliner, 2008; Tomlinson, 2005a) and significant as learners are more likely to be interested and invested. The National Research Council (2000) states that “motivation affects the amount of time that people are willing to devote to learning” (p. 60). In 40 studies, Uguroglu and Walberg (1979) found 232 correlations between motivation and academic learning, 98% of which were positive. Akey (2006) adds that motivated students are more likely to be engaged students and engagement is critical to student learning.

Finally, engagement has been shown to positively affect achievement (Akey, 2006; Finn, 1993; Finn & Rock, 1997). Dowson and McInerney (2001) point out the importance of student engagement and its positive influence on learning. Hancock and Betts (2002) state, “Middle-level students learn best when they are actively engaged with content” (p.12). Thus, by incorporating student choice, interest, challenge, and enjoyment, DI is likely to increase motivation and engagement, leading to, achievement and success.

Current Practice

Research shows that teachers recognize the importance of attending to the needs of diverse learners (Hootstein, 1998; Scott, Vitale, & Masten, 1998; Tomlinson et al., 2003). On the other hand,
research also shows that teachers rarely utilize differentiated practices (Hootstein; McIntosh, Vaughn, Schumm, Haager, & Lee, 1993; Moon, Tomlinson, & Callahan, 1995; Scott et al.; Tomlinson, 2005b). The activities that teachers cited as common DI practices were no more than single, minor adjustments. Additionally, while many teachers accept students with special needs or diverse experiences into their classrooms (McIntosh et al.), the modifications made frequently promote only reinforcement and rapport (Vaughn & Schumm, 1994) or a reduction in expectations (Deno, as cited in Tomlinson et al., 2003; Fuchs & Fuchs, 1998). Therefore, if teachers recognize the importance, they may hold a teaching philosophy similar to DI, yet their actions in the classroom may not reflect this.

Callahan, Tomlinson, Moon, Brighton, and Hertberg (as cited in Tomlinson et al., 2003) propose that teachers do not make adaptations because they “do not know how to modify the curriculum for students whose proficiencies extend beyond those prescribed by the grade-level curricula” (p. 122). Schumm, Moody, and Vaughn (2000) suggest that many teachers may be confused, not knowing what types of instructional practices are most effective. Moreover, Callahan, Tomlinson, Moon, Brighton, and Hertberg suggest that teachers might feel uncertain about classroom management capabilities in classrooms that revolve around a relaxed, student-centered atmosphere versus authoritarian, teacher-centered ways. All of this is possibly stemming from the fact that few programs train educators in teaching diverse learners (Tomlinson et al.). Scott et al. (1998), in their literature review, site numerous studies utilizing survey methods which found lack of teacher training and inadequate administrative support to impede differentiated practices.

Tomlinson et al. (2003) state that:

general education teachers may ... reject adapting instruction...because they feel doing so calls attention to student differences, ... it is not their job... , they are unaware of learner needs, they believe special treatment is poor preparation for a tough world that does not provide special treatment, or teachers do not feel (advanced learners) need adaptations. (p. 122)

Additionally, these authors write that teachers might see this task as impractical or impossible. Mehlinger (1995) reveals that “teachers embrace the value of treating each child as a unique individual while instructing children as if they were virtually identical” (p. 4) because then no student appears to receive an unfair advantage. Brighton (2003) studied teachers’ beliefs about diversity and the impact this had on their
eagerness and ability to incorporate differentiated instruction. Brighton found that when the individual’s preexisting principles held a need to address academic diversity, there was greater success with classroom differentiation. Teachers that did not see the need to address academic diversity made poorer attempts at incorporating differentiation.

Another line of reasoning for the mismatch in teacher awareness and utilization of DI places responsibility on current accountability standards and high stakes testing. Tomlinson (2000) advises that standards-based teaching might also have an affect:

For many teachers, curriculum has become a prescribed set of academic standards, instructional pacing has become a race against a clock to cover the standards, and the sole goal of teaching has been reduced to raising student test scores on a single test, the value of which has scarcely been questioned in the public forum. Teachers feel as though they are torn in opposing directions. (p. 7)

Anderson (2007) and Tomlinson and Allan (2000) speculate that “increasing accountability demands” (Anderson, p. 49) discourages creativity in teaching and designing lessons, classroom design, and methods of assessment (Tomlinson & Allan). Tomlinson (2005b) notes that high-stakes testing encourages teachers to teach standardized material in a standardized way to a standardized group of students that are the same age or in the same grade. She adds that high-stakes testing seems to mandate uniform practices. “Teachers feel pressure to raise the standardized test scores of students who clearly are not standardized” (Tomlinson, 2004a, p. 28). Unfortunately, meeting the demands of standardized testing results can greatly hinder differentiation practices (Tomlinson, 2000).

All in all, literature contends that a lack in differentiated strategies stems from a lack in training and support, which likely creates a lack in teacher self-efficacy. Second, teacher beliefs about student differences and equality in the classroom can hinder efforts. Finally, a focus on high stakes testing and accountability standards may lead to a lack in differentiated classrooms.

Educational literature delineates the discrepancy between the view that practices addressing diversity in the classroom are needed and the lack of teacher application. The majority of the reasons for this discrepancy, however, are theories based mostly on self-report data obtained from observations, surveys, and speculation on teachers’ reasons for not implementing DI. Where the literature falls short is in documenting the experiences of the teachers who have or are working to incorporate differentiated
practices in their classrooms or go so far as to adhere to a philosophy that includes DI. These personal accounts are crucial as they may help in determining why DI is not prevalent, the difficulties associated with its implementation, and what may be needed to encourage widespread use. A better understanding of teacher experience with DI may lead to the creation of better training and supply more appropriate supports that will lead to more effective DI.

Professional Development

Literature on professional development, in general, is extensive. Professional development related specifically to differentiated instruction is also fairly extensive, however, it is important to understand what exactly teachers need from training experiences to implement DI effectively and consistently. Current research offers a variety of suggestions for providing professional development on DI for teachers and staff.

Chapman and King (2005) provide eleven suggestions to include in staff development on DI. These suggestions are what trainers should suggest to teachers. They include encouraging teachers to incorporate the standards, vary instruction, create a climate conducive to learning, provide variety to students, know the students, partake in ongoing assessment, create a student-focused classroom, and expect gradual change.

Benjamin (2006) suggests that administrators encourage collegiality as a way to provide teachers encouragement, ideas, resources and a support system. When a change in practice is necessitated, research contends that this transformation is often extremely difficult (Edwards et al., 2006; Tomlinson et al., 2003). As a result, the need for continual and lasting support is necessary. Professional development must move beyond the one time, piecemeal event to sustained and lasting support.

Hawkins (2009) presents three chief elements of on-going staff development related to DI. The first element includes a complete and honest assessment of pre-existing beliefs and a consideration for the difficulty of change. The second element involves a comprehensive consideration and analysis of the differences between differentiated classrooms and more traditional classrooms. Finally, the third element requires that trainers prepare answers to anticipated questions. Hawkins also determined from his research
study that teacher efficacy with DI often varies with experience. He advocates that teachers’ experience with DI be evaluated before professional development so that training can be provided appropriately.

Finally, Tomlinson (1999b) contends that teachers new to the practice of DI be matched with teachers who effectively employ DI. This provides them with a successful model of what DI is and what it could look like. Tomlinson (2005b) adds that staff development for DI should help teachers learn how to reflect on their students as individuals, inform them of current research on effective learning and teaching, teach them how to document students’ needs, help teachers see the connection between curriculum, assessment, and instruction, include teachers’ current practices, encourage discussion of instruction and promote the fact that instruction varies, assess the impact of different teaching strategies on student learning, incorporate collaboration, and provide comprehensive and sustained support. Finally, she suggests that training for teachers itself be differentiated based on need.

Conclusion

DI is built upon various theories in teaching and learning, such as ideas about student readiness and the importance of working in students’ zone of proximal development and incorporating motivation, interest, and engagement. The majority of the literature suggests that DI be considered as one way to support the diverse needs of students (Chapman & King, 2005; Hoover & Patton, 2004, 2005; Scott et al., 1998; Tomlinson, 1999a, 1999b, 2000, 2004a, 2004b, 2005a, 2005b; Tomlinson et al., 2003). For the most part, current research on DI includes descriptive data outlining definitions of DI, key components, implementation strategies, and survey data outlining the prevalence of DI in the classroom.

There are gaps in the literature regarding teachers’ personal experiences employing DI practices and student accounts of and experiences in classrooms that utilize DI. While general information on professional development exists, Tomlinson et al. (2003) point out, we need to continue to build our professional development models so as to provide for teachers the most effective training possible. Thus, it is important to understand the experiences of teachers as they implement DI so that appropriate professional development can be provided in order to ensure effectiveness. This study investigated teacher experience with DI implementation and the viewpoints of the students in the classrooms.
CHAPTER 3

METHODS

DI has been described in the literature as an effective teaching practice that meets the needs of diverse learners, and promotes student interest, motivation, engagement, and achievement (Akey, 2006; Nichols & Berliner, 2008; Tomlinson, 2005a). This research study used a qualitative design to examine middle school teachers’ experiences with implementing DI practices in their classrooms. Corollary student data was collected as well. Qualitative data was collected to provide a rich understanding of the experiences of four teachers experimenting with DI. Corollary student data provided supplementary information related to the teacher data. Data was gathered through teacher and student interviews and surveys, audio taped bimonthly professional team meetings, and observations.

Site

The site chosen for this study was a laboratory school in the Midwest. This site was chosen because of its location and its willingness to accommodate for and support research. The school is located in a midsize town near a major university. The school consists of children and students age six weeks through twelfth grade. During the 2007-2008 school year, culturally diverse and ethnic minority groups made up 25.8% of the student body. Because this school is a laboratory school located near a major university, approximately 400 students from the university have practicum experiences at the school each semester. This means that classrooms often have multiple adults present.

Additionally, the school is not required to report scores for NCLB requirements because it does not receive any federal funding. The school’s teachers are faculty of the local university, and they have the same contractual agreements as any professor on the local campus. Because of these circumstances the school is provided more academic freedom than other schools, however, they do make considerable efforts to learn and implement statewide initiatives.

Participants

Participants included four eighth grade, core teachers from this laboratory school and thirteen of their students. Teacher participants were chosen based on their interest in identifying strategies for a particularly diverse eighth grade class. The researcher asked permission from school administrators to
conduct the research and received consent. Parents/Guardians, students, and teachers were informed of the research plan, that teacher and student participation was voluntary, and that they or their child could withdraw at any time (see Appendices A and B). A consent form for teachers, students, and their parents was included, and consent was requested (see Appendices C, D, and E). All four teachers agreed to participate and thirteen out of twenty six students participated. Teacher names have been replaced with pseudonyms for reasons of confidentiality and no student names were used.

The eighth grade class was split into two sections. The thirteen student participants were split between the two classes and belonged to a fairly diverse group of eighth graders. Sixty two percent were male and thirty eight percent were females. Fifteen out of the twenty six students were Caucasian (58%), followed by six African Americans (23%), three Hispanics (12%), and two Pacific Islander/Asian students (7%). The majority of the students belonged to middle class families and the students were considered average students academically by their eighth grade teachers.

Sources of Data

Teacher Survey

All four, core teachers were asked to complete the questionnaire designed by Edwards et al. (2006) at the beginning of the study and at the end of the study. The survey was designed to measure teacher use of, attitudes towards, and understanding of DI. The self-report survey consists of three sections. The first section includes 54 questions with 5-point Likert scale responses. The first subsection asks subjects to circle the number (1 being Not at all, 5 being Frequently) that best describes how often they utilize certain DI practices. The second subsection asks respondents how well prepared they feel (1 being Not at all, 5 being Very). The third subsection asks respondents if they think the listed strategies are necessary for effective teaching (1 being Not at all, 5 being Very). All three subsections include the same eighteen DI practices, including items such as “Use tiered assignments” (Item 5), “Adapt lessons for individual students” (Item 15), and “Use cooperative and flexible grouping” (Item 42). The second major section of the questionnaire asks the respondent to define five vocabulary terms related to DI. The last major section asks the respondent to provide demographic information. Permission to use the survey was obtained from the authors. The survey is provided in Appendix F.
Completed self-reports and all other documents, audiotapes, and transcriptions were kept in a secure location until given to the researcher for analysis. All data was kept confidential and participants were identified with a code instead of a name. The researcher was the only individual aware of these codes.

Teacher Interviews

The researcher interviewed three of the four teachers at least once during the research project. These interviews allowed the researcher to collect data that could not be obtained from the teacher surveys alone. These interviews were audio taped and transcribed.

Classroom Observations

The researcher visited the classrooms of three of the teachers in order to collect observational data. Observations were scheduled when the teacher identified that he or she would be implementing DI. The researcher took detailed notes during the visit. These notes included data on classroom atmosphere, teacher practices, student responses, and evidence of DI.

Student Survey

The eighth grade student participants were asked to complete the *My Class Activities* (Gentry & Gable, 2001) instrument twice during the research study. Once, before the teachers intentionally implemented DI in their classrooms for purposes of this study, and again at the end of the study. The researcher administered the instrument to all participating students notifying them that their teachers would not see their responses to encourage them to answer honestly. This instrument assesses four dimensions (*Choice*, *Interest*, *Challenge*, and *Enjoyment*) and consists of 31 items asking students to respond to a five-point frequency scale (*Never*, *Seldom*, *Sometimes*, *Often*, and *Always*). The *Interest* dimension measures students’ thoughts on teacher incorporation of student interests or what is most appealing to students. The *Challenge* dimension taps into how challenged students feel. *Choice* emphasizes how often students feel they are given choices and in what areas, such as groupings. Finally, the *Enjoyment* dimension measures how pleasing and satisfying students perceive their classrooms to be.

*My Class Activities* was designed and piloted on 1,523 middle school students (grades 6-8) from rural, urban, and suburban schools. The sample was primarily Caucasian (83%) but included Asian Americans (9%), African Americans (5%), and Hispanic Americans (2%). Fifty-one percent of the
individuals were male and 49% were female. The survey includes items such as “What I do in my class fits my interests” (Item 1) and “I can choose materials to work with in the class” (Item 23). The instrument is considered to be reliable (alpha reliability estimates of the subscores ranged from .75 to .92) and valid (Tucker-Lewis “goodness of fit” index of 0.88 and .09 mean root square residual) for measurement of students’ attitudes towards school with respect to choice, interest, challenge, and enjoyment (Gentry & Gable, 2001). Additionally, with the exception of two items, a minimum $t$-value of 11.41 indicates items fit the hypothesized model. The authors recommend this survey to researchers interested in obtaining data of student attitudes towards school as specific treatments are applied (Gentry & Gable). See Appendix G.

Student Interviews

The researcher asked six students to participate in one-on-one interviews. Students were chosen at random from the list of participating students. The researcher asked questions designed to address whether students had noticed any changes in their classrooms, what they liked about their classes, what they did not like about their classes, and other questions related to students’ thoughts on school. Questions were open-ended to encourage students to respond with more than just a single word answer. A few of the questions included: “Tell me about your favorite class or classes,” “Tell me about your least favorite class or classes,” “How do you learn best?” and “What motivates you?” Semistructured interview protocols were used, and the researcher took detailed notes throughout the interviews.

Procedure

Eighth grade math, science, social studies, and language arts teachers were provided a letter describing the research project and a consent form for participation. The teachers had the choice of participation and of opting out of the study at any time. Once consent was received, participating teachers were asked to complete the self-report questionnaire (Edwards et al., 2006) designed to measure their current use of, understanding of, and attitudes towards DI.

Following the completion of the teacher self-reports, the researcher conducted a thirty minute presentation on DI for the group of participating classroom teachers at the school. Following the presentation, the teachers were asked to select, implement, and report regularly on new methods of DI for implementation in their 8th grade class for the semester (August 2008-December 2008). Three of the four
teachers chose to participate in this part of the study. Teachers had the freedom to implement DI as they saw appropriate for their classroom, students, and teaching preferences.

Letters explaining the research project were sent home to parents and guardians, and the school principal explained the project to 8th grade students during class time. Students were in charge of returning parent consent to the school office. The researcher then met with individual students whose parents had agreed to their child's participation and asked for student consent.

The participating 8th grade students completed the *My Class Activities* instrument (Gentry & Gable, 2001) mid-semester, immediately before their teachers began implementing DI for purposes of this study. Students were informed at this time that their teachers would not see their answers so that they would feel comfortable answering honestly. The students also completed the survey at the end of the research study.

Following the DI presentation, the researcher met with the participating teachers as a group approximately two times per month; length of meetings ranged from seven minutes to thirty-five minutes. The meetings were audio taped and later transcribed. At the meetings, participants discussed concerns, ideas, thoughts, and issues surrounding DI and its implementation in the classroom. Teachers also had the opportunity to collaborate with one another and share ideas, resources, successes, and suggestions. The researcher provided the teachers with any needed material and references to help with implementation and understanding. The transcriptions were used as the primary data source in order to uncover the experiences of these four teachers as they implemented DI.

The researcher also conducted classroom observations one time in three of the classrooms. These observations were designed to collect observational data about DI practices being utilized, student responses, classroom atmosphere, teacher actions, interactions between teachers and students, and other observations of note.

Towards the end of the study, the researcher asked six of the thirteen students to participate in a personal interview with the researcher. This interview consisted of questions about their classrooms, changes they had noticed in their classrooms, activities and practices they liked, things they did not like, and their overall impression of school.
Once all three teachers had a chance to experiment with DI, the researcher asked them to complete the same self-report survey (Edwards et al., 2006) to see if and how their use of, attitudes towards, and understanding of DI had changed. Shortly after that, the researcher conducted the final administration of the My Class Activities survey to participating students. Data collection took place over approximately seven months.

**Data Analysis**

The data gathered during the seven months provided valuable insight into teacher experimentation with DI implementation and student perceptions. Data was collected in a variety of ways, including interviews with teachers and students, team meetings, and teacher and student surveys. Bimonthly team meetings and teacher and student interviews were transcribed for further analysis.

According to Bogden and Biklen (1998), “the beginning researcher should borrow strategies from the analysis-in-the-field mode, but leave the more formal analysis until most of the data are in” (p.158). For this research study, data analysis was ongoing throughout the study. I reread notes before team meetings and created questions based on comments from previous meetings. As themes began to emerge, I presented these to the participants during team meetings in order to further the discussion or obtain clarity. The bulk of data analysis, however, occurred after all data were collected. Analysis was built upon an “interpretivist conceptual framework” which involves the “researcher considering both words and actions in terms of the meanings they provide” (Brighton, 2003, p. 182). Using that approach, this study sought to understand how four, middle school teachers approached and experienced the process of implementing DI. Data sources used for this interpretation included team meeting notes and transcription, teacher and student survey data, and the thoughts of four teachers and six students in these classrooms collected through interviews. Primary data sources included teacher interviews, surveys and team meeting transcriptions, which were triangulated with secondary data sources: student surveys and interviews.

Primary data was analyzed by first developing a coding system (Bogden & Biklen, 1998). Coding themes were identified using the following process. Transcriptions were read multiple times and common phrases or ways of thinking were identified. Common remarks and topics noted during data collection were included in this process. These common words and phrases were then grouped. The groupings were
evaluated by comparison, condensed, and eventually became “coding categories” (Bogden & Biklen, p. 171). The next step was to “assign the coding categories to units of data” (p. 182). As the data was reviewed, the coding categories were assigned to pertinent pieces of data in the margins of the transcripts. Coding categories that were not used more than once were discarded. The remaining coding categories were named and became the three major themes for this work: transparency, grading, and self-efficacy. Table 1 illustrates the coding process including the common phrases and topics which were combined into coding categories which eventually became the three major themes.

Once developed, this fixed set of codes was used to read through the data and label phrases, sentences, and entire comments with the relevant code. Using Bogden and Biklen’s (1998) model of “coded hard copy fieldnotes” (p. 183) the entire set of data was coded again. Once this process was complete, data was physically separated, categorizing it into the three categories identified. This allowed me to see all related units of data grouped together into a cohesive set. Secondary data sources were not included in this coding process, but were used to supplement the primary data. While composing this thesis, I continued to reflect back on the data and search for evidence that supported my understanding and interpretations. Each theme is presented in Chapter 4 along with supporting quotes and comments from teachers and students.
<table>
<thead>
<tr>
<th>Major Themes</th>
<th>Coding Categories</th>
<th>Common Phrases/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>Transparency</td>
<td>Grouping students, Jigsaw activities, Student roles in groups, Students comparing themselves, Student competitiveness, Transparency, Resource programs, DI and labeling students, Pulling kids for individual help, Grouping and peer stigma, Multiple test versions, Differentiated tests, Singling kids out, Fairness/Equity, Leveled books</td>
</tr>
<tr>
<td></td>
<td>DI in the Classroom</td>
<td>Student choice, Student-centered, Real-world application, Students constructing knowledge, Student engagement, Differentiated worksheets, Peer support/learning from each other, Working at own rate, Student learning styles, Student readiness level, Differentiating projects, Differentiating questions, Meeting the needs of individual students, Gifted and talented students, Proactive vs. reactive, Open vs. closed questions, Student autonomy, Student preference of open-ended questions</td>
</tr>
<tr>
<td>Grading</td>
<td>Evaluation/Grading</td>
<td>Student products, Knowing a student's abilities, Evaluating student work, Knowing one's students, Teacher evaluation, Test retakes, Teacher expectations, Grades, Extra credit, Teacher bias when grading, Rubrics, Menu of choices, Fairness, Equity</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>Training</td>
<td>Building a teaching toolbox, Number of years of teaching, Teaching strategies, Training in DI, Pre-service training, Elementary vs. secondary perspective on DI, Teaching philosophy</td>
</tr>
<tr>
<td></td>
<td>Uncertainty</td>
<td>Difference in subject areas (Is it more difficult to implement DI in some subject areas?), Time factors, Systemic issues, DI at the secondary level, Natural differentiation, Classroom management, High stakes test scores, DI as an art, Effective teaching, We don't know what we're doing, Is this DI?</td>
</tr>
</tbody>
</table>
CHAPTER 4

RESULTS

In the previous chapters, I have provided an overview of DI as it relates to the qualitative study I conducted with four, middle school teachers who contemplated, discussed, designed, and experimented with DI in their classrooms. In this chapter, I present the teachers' responses to the study and their students' perceptions of school. I discuss myself as researcher and the role I played in the study and the nature of the school organization my participants belonged to. I explain the evolution of my research questions, provide a detailed explanation of the themes that emerged from the data, suggest implications for professional development, propose future research possibilities, and clarify the importance of this research for me as a future school psychologist.

Results

On the teacher survey, Jamie indicated teaching in the range of 7-19 years. Results from the pre-survey indicated use of the 18 differentiated strategies somewhere between Not at all to Frequently (M=3.56). On average Jamie felt somewhat more prepared (M=3.61) and felt that the listed strategies were even more necessary (M=3.95). Jamie implemented a project-based endeavor that allowed for student interest and choice. Because Jamie's DI was a project-based activity, the implementation spanned approximately one month.

Jessie's teaching experience fell in the 4-6 years range. Mean use of the strategies listed in the survey approached the Frequently category (M=4.5). Jessie felt a little less prepared on average (M=4.22), yet indicated the necessity of the strategies were close to Very necessary (M=4.61). Jessie chose to focus on differentiating questions for students according to their readiness.

Lane's use of the strategies was lower than the other two participants (M=2.39). A feeling of preparation to use these strategies was average (M=2.72), and Lane indicated a mean score of 3.33 with regards to the necessity of using the 18 differentiated techniques. Lane chose to design a lesson based on student readiness and differentiated the product component of the lesson.

Casey's information was absent as the survey was not completed and DI was not implemented in the classroom as part of this study.
The 13 student participants completed the *My Class Activities* (Gentry & Gable, 2001) survey immediately before their teachers purposely implemented DI for this study and again at the end of the study. The *Interest* dimension measures students’ thoughts on how often their interests are incorporated in classroom activities. The *Challenge* dimension taps into how challenged students feel. *Choice* emphasizes how often students feel they are given choices and in what areas, such as groupings. Finally, the *Enjoyment* dimension measures how pleasing and satisfying students perceive their classrooms to be. Students respond to the listed statements by indicating how often that event occurs. Answers range from *Never* to *Always*. For purposes of analysis, I attached a numerical value to each response, 1 to 5 respectively. Table 2 displays the results.

**Table 2**  
*Student Survey Data*

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>3.07</td>
<td>2.94</td>
</tr>
<tr>
<td>Choice</td>
<td>2.77</td>
<td>2.87</td>
</tr>
<tr>
<td>Challenge</td>
<td>3.28</td>
<td>3.41</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>3.00</td>
<td>2.70</td>
</tr>
</tbody>
</table>

Mean student responses centered on *Sometimes*, which was given a numeric code of 3. This indicates that, on average, the students felt that their teachers *Sometimes* included activities that fit the dimensions of interest, choice, challenge, and enjoyment as described above. Results changed very little between pre and post surveys.
In addition to the surveys, six students were interviewed in order to better understand their general perceptions of school and how they interpreted the changes in their classrooms as DI was implemented. Students were asked the same general questions, as is described in the Methods section. I interviewed each student separately, so their thoughts and answers would not be skewed from their peers’ responses.

When I asked students to describe for me their favorite classes, three students explained that these classes incorporated their interests and ability levels and allowed them to do more activities and projects. For example, one student said, “I usually think it fits my interests, it fits my abilities, and let’s me go wild” (personal correspondence, February 27, 2009). Two students mentioned the importance of being able to work with partners, and two indicated that their favorite classes allowed them to open up and feel free. One student answered, “Well, I enjoy that class a lot because we open it up, and we are allowed to express our creative sides. I mean she really just lets us go” (personal correspondence, February 27, 2009). The following question asked students to describe their least favorite classes. Three students mentioned that bookwork turns them off in a class, two students said they did not like classes that were confusing or difficult, and two students noted that their least favorite classes do the same thing every day.

Students were then asked to describe what a good teacher looks like and what a less effective teacher looks like. Students noted that good teachers include hands-on activities, understand their students’ needs, and allow them to work in groups. One student specifically stated, “I think a good teacher is someone who understands both sides of a kid. Not just their creative side but also the side where they think. So I think a teacher who really understands kids and understands how they work and how they learn is a good teacher” (personal correspondence, February 27, 2009). Students added that their least favorite teachers are often scattered and confusing. Along these same lines, I asked the students how they learn best. Five of the six students indicated that hands-on activities help them learn the best and two students added that they learn more in challenging classes. When students were asked if others learn in the same way they do, three students said some and three students said that no one learns in the same way that they do.

During student interviews, I also asked students to tell me about some of their favorite projects that they have done recently. One student asserted, “In (class), I like what we’re doing now. We’re reading then can do any project we want. Like out of 30 or 40 projects, we can do whatever we want. We come in
here and we read then do like a collage or a map or something like that about something we’ve been reading” (personal correspondence, February 27, 2009). Two other students also talked about the product choice activity they were doing in Jamie’s class, and two students noted that they like any project that allows them to be creative. Three indicated projects that involved building and designing. When asked if all students do the same thing in their classes, four students said that all students do mostly the same thing. A couple students added that sometimes students arrive at answers differently. Two students indicated that everyone does exactly the same thing.

My final two questions for students revolved around their motivation to succeed in school and the frequency of choice in their classrooms. Students indicated that they were mostly motivated by grades and the prospect of getting into college. One student added, “I like being respected by the teachers and having them think highly of you” (personal correspondence, February 27, 2009). Lastly, four students alleged that they are allowed choice in some of their classrooms (two students specifically noted two of the core classrooms) and one student claimed, “Not too much. No, its kind of, you have to do the one thing” (personal correspondence, February 27, 2009).

In summary, common responses regarding what students liked involved student interest, the ability to work with partners, the fondness of challenge and teachers that meet their needs, inclusion of student choice, and hands-on activities. Most students recognized that others learn in different ways, yet indicated that they perceive that they are most often required to do or learn the exact same thing.

Discussion

As the researcher, it is imperative that I examine, explain, and support my personal feelings towards DI. My perspective influenced how I interacted with my participants during data collection and the way I interpreted and understood the data. When I was first introduced to DI and began exploring the literature, I felt it matched my support for inclusive education for all, my belief in appropriate education for every student in the classroom, and my support for recognizing and promoting student diversity.

During my graduate coursework, I worked as a graduate assistant in the special education department. One responsibility included reflecting with and providing feedback to preservice teachers as they prepared, implemented, and assessed actual classroom lessons and activities for students with
disabilities. As I worked with these students, I realized they themselves were diverse and required a differentiated approach to content, process, and product. All students were required to complete a field experience component and followed the same rubric. The pathways to help them accomplish the field experience, however, required differentiation to ensure that all students met success.

For example, there was one student that I worked with who needed my support during much of her planning. It helped her to talk about and discuss her thoughts and ideas for lessons while she was creating them. I provided her this time, as I felt it was necessary considering her background, needs, and lack of previous coursework. The content and process she required looked much different than it did for other students. Another pair of preservice teachers needed more guidance and support with regards to their coteaching relationship. I provided them with a different kind of support by helping them to address their struggles with communication and planning. For off campus students, the content and process also looked different. Many of them were practicing teachers; therefore, their readiness levels were more advanced as they had more experience. Furthermore, because of the distance, these teachers submitted much of their work electronically. This required a different type of reflection and feedback process. All in all, the students I worked with came from different backgrounds and with different levels of experience. This necessitated differentiated content, process, and product so that all students met the ultimate goal of the course. Through this experience, I realized the value in understanding and addressing differences. This realization led to more than a belief in the practice of DI, but a concerted effort to act and apply DI when working with diverse individuals.

Based upon my feelings towards DI and my commitment to practice DI, I sought to differentiate my instruction for my teacher participants in this research study as well. While working with my participants and working with the data, I gained a better understanding of DI. The more I attempted DI and evaluated the implementation, the more I appreciated its complexity. I now understand that it takes a concerted effort, commitment, and possibly an entire shift in practice and philosophy. For example, I allowed my participants choice in their DI implementation. I created several different ways for teachers to share their thoughts and experiences, including team meetings, an online forum, teacher forms, and teacher interviews. Yet the more I consider my practice, the more I realize I am only at the beginning of my
understanding of DI. For example, I failed to recognize the specific needs of each of my participants. I did not take the time to better understand my participants and their understanding of DI before asking them to engage in and implement DI in their classrooms.

In retrospect, I also learned that good professional development requires an understanding of how teachers view professional development and their trainer and what information they seek from the experience (Hawkins, 2009; Tomlinson, 2005). These teachers revealed through comments and questions what they sought to obtain from this research and from me as the researcher. Jamie commented that the study would “give us tools” (personal correspondence, September 18, 2008) to help with DI implementation. Jessie added at the following meeting, “the more that we can get for DI the better.” Later, adding, “I think it (study) will give us tools...That’s exciting because you have the sources and the tools for us to be able to do that” (personal correspondence, September 18, 2008). Casey included, “You’re saving me time by getting books and sources for me” (personal communication, September 18, 2008). I did offer to help search for information and resources at their request at the beginning of the study. It is important to note that they saw this as beneficial and valuable. Besides indicating that this study would provide them the necessary tools, there were specific pieces of information the subjects were looking for. As the researcher participant, I provided them with the articles and references that I came across which matched their requests. These requests indicate that the participants were seeking information regarding the specific differentiation they wanted to incorporate and implement as part of this study.

On the same front, other comments, in addition to the requests, indicated that these teachers looked to me as the expert in the study. During a conversation about transparency, Lane asked me specifically, “Yeah, so what’s your thoughts on that?” Later he stated, “What’s research say about hiding, or not hiding, but not making it really obvious that kids are being differentiated in the classroom? I mean is there any research out there?” (personal communication, October 2, 2008). During the final meeting, Lane asked one last time, “What does the research say?” (personal communication, March 11, 2009) with regards to transparency. These questions addressed to me indicate that these teachers saw me as an expert who could provide the support and answers to these questions. Furthermore, albeit my proposition that these teachers design DI that fits their needs, interests, and preferences, they still looked to me for guidance.
and affirmation. Jamie stated during the DI presentation, "I just need to know what you were looking for cuz I think I know what I want. I want to know what you're looking for because I can do either or...I just want to be clear on that" (personal communication, September 4, 2008). After establishing that this project was open to their interpretation and their design, Jamie explained an idea for a project. The question was then raised, "Does that meet, that meets in my head, but is that going to be so far skewed for you?" (personal communication, September 4, 2008). Viewing training and professional development as solely an informational session and not as a means for exploring and examining personal belief systems and philosophies suggests important implications for professional development expectations. This is discussed further in the Implications chapter.

This reflection and understanding is important to acknowledge and consider as it certainly affected the results. The teachers' choices in differentiated practices may be a reflection of how I presented the literature on DI and how they interpreted me and the study I involved them in. I provided them information but very little instruction and training because I did not recognize the various levels of understanding, past training experiences provided to them, and previous practice. Furthermore, I failed to recognize the expectations the teachers held for the research study and for me as the researcher. Hedrick (2005) states, "high quality differentiation necessitates that teachers understand both the theory and related practices, as well as develop skills" (p. 32). I did not allow my participants time to discuss and process as a group during or immediately after the presentation. I fed them a list of practices that align with DI, examples of what DI could look like, and possible steps they might consider to help them experiment with DI. I failed to build for them a differentiated and comprehensive training on DI.

In the same light, the time constraint on the study as a whole played another significant role. Tomlinson (1999a) advises that teachers be given plenty of time to make sense of DI through reflection, goal setting, planning, observing, and discussion with peers. The study began in September 2008 and the teachers were notified that data collection would end in December that same year. The data collection actually did not end until March of 2009; however, this only entailed seven months. A differentiated classroom takes years to develop (Tomlinson et al., 2003). This study did not allow my participants and me the time to truly explore, question, and dissect DI let alone implement it. By gaining a deeper
understanding of DI through the literature, through analysis of the data, and through my own experiences of trying it, I now understand the difficulty in doing this in just seven months.

Further, the way that I set up and approached this study with my participants likely had an impact. The fact that I asked them to:

Implement differentiated instruction...Small scale, and however you see it working for your class and your needs. So maybe thinking about teaching in a new way, and if you already have, start experimenting with it and expanding on what you’re already doing. It doesn’t mean every student, every day, every lesson, but here and there, trying it out. And then share with me your thoughts on it and your experiences with it (Tonya Keefer, personal correspondence, September 4, 2008)

without providing for them a clear picture of what DI is and means, likely influenced their approach and implementation. I asked them to implement DI on a small scale, in order to make it a feasible endeavor in the project’s time frame. I was actually asking them to differentiate some aspect of their teaching and their classroom. They did exactly this; they differentiated, as they understood it and in the best way they knew how.

When I began this investigation, I sought the answers to the following questions: (a) Did teacher use of DI change throughout the implementation? (b) How did teacher understanding of DI change throughout the implementation? (c) How did teacher attitude towards DI change throughout the implementation? (d) How did students interpret the changes in their classrooms as DI was implemented?

As the research study progressed, as I gained a better understanding of myself as a participant in the research and novice in DI, and as I analyzed the data I had collected, these questions evolved and changed. In qualitative research, “the research design...emerges over time” (Wallen & Fraenkel, 2001, p. 434), and I found that to be true in this project. While working with these teachers, analyzing the data as it was collected, reviewing the entire body of data, and reflecting upon my own actions as the researcher participant, I recognized that while teachers verbally supported addressing student diversity and implementing DI, their actions and comments told another story. This analysis led me to address the following questions: (a) How did the teachers acknowledge DI and its approach to addressing student diversity? (b) What concerns or issues developed as DI was discussed and implemented?

The student data collected provides additional insight for this study. To get that data, I invited the students in these classrooms to share their preferences in school practices and understanding of school in
general. My original intent was to investigate the students’ understanding of the differentiated practices their teachers were implementing. Due to time constraints and difficulty in obtaining permission, the student surveys were not administered pre- and post- as intended. However, as I conducted student surveys and student interviews and reviewed the information they provided, I found this data supplemented the teacher data and reinforced the actions and words of the teachers. The question I found myself evaluating was: (a) How did the teachers’ choices in differentiation align with their students’ perceptions of school and school practices?

In addition to my role in this research, the time constraints, and the development of questions, it is also important to understand the nature of the school where my teacher participants worked. As noted in the Methods chapter, the teachers in this study taught at a school that is much different from other schools in terms of accountability and high stakes testing. They were not required to report student scores on high stakes tests because the school was not federally funded. As addressed in the literature review, current accountability standards and high stakes testing possibly discourage teachers from attempting to differentiate their classrooms. My teacher participants seemed to not be as subject to these standards and accountability concerns at the time of the study. During my presentation, Lane commented on NCLB, “We don’t have to worry about those rules here. We live in a different world. We really do. We have a freedom that that gives us.” Lane added at a later meeting:

I’ve never been impacted by NCLB except from the standpoint that there’s an emphasis on standardized testing and, of course, that does affect me. It shouldn’t, but it does. I want students to do well on the standardized testing, but I know in the back of my mind the best way to teach is the way we’ve always been teaching here and that’s about concepts and comprehension. (personal correspondence, October 2, 2008)

Casey responded, “It hasn’t been in mine because our science curriculum is so off the norm” (personal correspondence, October 2, 2008). These comments suggest that these teachers recognized that they were not held to the same expectations in terms of student scores on high stakes testing.

The core of this study emerged from the data recorded from the four participating teachers. Many teachers recognize the need for DI in order to address student diversity; however, substantially fewer apply DI in their classroom. Much of the literature explaining this trend offers hypotheses based on self-report data from surveys and observations. This study included these methods, while also providing for and then
examining the rich dialogue between teachers as they experimented with DI. These methods allow for an analysis of actual experience and practice from teachers and may provide valuable insight for professional development and training experiences related to DI. This study includes a detailed discussion about the process of teachers implementing DI. This discussion includes the themes that emerged from the data and what this means for professional development and support.

Teacher Awareness of Classroom Diversity

The teachers in this study expressed an appreciation for student diversity and recognized the importance of addressing it as evidenced in their survey responses and conversations. Three of the four teachers completed the teacher survey at the beginning of the study. When asked to indicate the necessity of 18 different DI strategies to effectively teach all students in their classrooms, mean responses centered around a ‘3’ for Lane (M=3.33), ‘4’ for Jamie (M=3.95), and ‘5’ for Jessie (M=4.61). A ‘1’ indicated Not At All and ‘5’ indicated Very. This indicates that these three teachers viewed these various strategies as somewhat of average importance to very important in effectively teaching all of their students.

Jamie, while discussing a project in past classes at the elementary level, stated, “Some kids worked quicker and so they were done in a week and a half, so they just started the next one” (personal correspondence, October 16, 2008). This comment denotes awareness that students work at different rates. Jessie commented during an interview, “When I think of differentiation, and I think of questioning, I think of how different questions can get all students to the level, to the highest level they can go” (personal correspondence, November 19, 2008), later adding through email correspondence, “Through the use of open-ended questions, students think about the questions at their own level” (personal correspondence, November 24, 2008). These comments indicate teacher recognition that students have different levels of achievement and questions can help students to reach their highest level. During one team meeting, Lane stated, “What I’ve been trying to do is to break the class down into groups of four or three and then have each university student work with them...so that each student’s need is being met better” (personal correspondence, October 16, 2008). Again this suggests that this teacher recognized students have different needs. Lane stated at the final team meeting, “There is such an emphasis on meeting the needs of individual
students” (personal communication, March 11, 2009). Teacher comments during meetings and interviews and survey data indicated these teachers’ general awareness of student differences and needs.

Further, teacher comments during team meetings and interviews indicated an awareness of the specific needs of the eighth grade class. During my presentation, Jessie remarked, “You couldn’t have picked a better class to come for. There’s a lot of need. We already are really working hard to try to come up with and figure out ways to help them. Plus the range is so great.” Jessie later commented, “I think we actually have one that’s quite at risk right now. And he’s pretty gifted but doesn’t know it... He makes very complex connections that no one else comes close to making (personal correspondence, September 4, 2008). At the following team meeting, the same teacher added, “The range is huge for them (students) because those guys are probably comprehending at a 4th grade level and then we have our college kids” (personal correspondence, September 18, 2008). Later in the conversation, Jessie commented on another group of students, “There’s kids in that section that really can’t read very well. They’re having struggles.” Adding soon after, “We have three kids in that section that are pretty, that struggle, struggle and could use some tools” (personal correspondence, September 18, 2008). Lane added, “It’s very applicable (the research study) for the 8th grade so I need to be able to do that” (personal correspondence, September 18, 2008).” These comments articulated the teachers’ awareness of some of the specific needs their students had and that implementation of DI could possibly help them to address these needs. Because they recognized the need for differentiation, they were interested in learning about and implementing it, however, the sections below illustrate that this was not easy.

Not only was there recognition of need and awareness of differences, these teachers viewed the study as a way to help them meet these needs. Jamie commented that this study on DI would “give us tools. We’ll be able to meet more kids’ needs. I mean, in some way, I mean I try to meet their needs. Maybe in a more, ineffectively, this might make it more effective” (personal correspondence, September 18, 2008).

**Emerging Themes**

As DI was discussed and experimented with, three prominent themes emerged during team meetings and teacher interviews. These themes represent the most prevalent topics identified from the data, as described in the Methods chapter.
Transparency

One theme thatsurfaced was transparency. During team meetings, participants raised the question of how transparent or open teachers should be when differentiating assignments, tests, instruction, etc. Transparency would entail a clear and visible way of differentiating so that students knew the teacher was differentiating for them and their peers. These teachers seemed to believe that students would be uncomfortable if their peers were aware of the differentiation. They believed that a low degree of transparency would be best.

During the first team meeting, a discussion developed about differentiating assignments for students. Lane asked the other participants, “How did you do that discreetly? Do you tell Jim over here that you’re gonna do these problems and Joe over there you’re gonna do these problems?” (personal communication, September 18, 2008). Casey responded, “Kent changes it, but the worksheets look exactly the same, but they’re not. Not when you look at them closely. The amount of hints that he gives, all the same questions, but the detail is different” (personal communication, September 18, 2008). Lane replied, “I guess my problem is, okay, here’s the assignment for tomorrow. How do you tell the kids that you want to only do the first three problems which are fundamental without singling them out?” (personal communication, September 18, 2008). Lane expressed here a belief that a low level of transparency would be necessary if DI was to be successfully implemented in his classroom. Further, there appears to be an underlying belief that those who receive DI would not want peers to know.

In a later meeting, Jamie suggested that Lane create a jigsaw-type activity where “one person was responsible for a certain section...and another person is responsible for another part according to their ability” (personal correspondence, October 16, 2008). Lane responded, “Oh, you have a mixed group but you’ve got different tasks within the group. Is that transparent? One of the smart kids might say, ‘You’ve got an easier problem than I do’” (personal correspondence, October 16, 2008). These comments not only convey concerns about transparency of DI and what it actually is but also about what would be transparent to the students and puzzlement over whether that would or would not be problematic.
More specific concerns involving DI and the possibility of stigmatizing students surfaced during meetings as well. During one meeting, Lane made the comment that students in the school’s resource room were often labeled, adding:

So I’m thinking about differentiated instruction in the classroom. I’m assuming they don’t want to be labeled there either... For instance, I want to work with a small group of kids, and when you have university students in there too it’s a good time to do it. You pull three or four out. The university student gives them individual instruction... where they can really go one-on-one or one-on-two, but it’s been my experience you gotta be very careful... what kids you choose. It’s just so obvious to everybody when I choose three kids who are low achieving, everybody knows, and those three kids know. You chose me because I’m not very good... so that’s what I’m wondering about. I choose groups and... my goal is to get at those two kids who are struggling, but I will throw a good kid in that group of three that I pull off to the side just so they can’t generalize about it. (personal correspondence, October 2, 2008)

This statement reflects Lane’s apparent understanding that DI necessitates ability grouping that sets in motion stereotypes and excluding certain students. Lane notes a desire to provide struggling students small group support or differentiated process in order to facilitate their learning. However, the statements suggest a desire to, at the same time, learn how to make DI less transparent so that students cannot identify who is in need of extra one-on-one support. An additional comment from Lane highlighted this concern. Lane iterated, “Well, I mean, this is the question I raised before. They get a stigma if they’re all in one group and you send a university student with them, and there goes the guys that don’t understand anything” (personal correspondence, October 16, 2008). It is evident from Lane’s words that making DI transparent, in this case, would draw attention to student deficits and lead to stigma.

Jamie addressed this issue further during the final meeting, indicating a beginning understanding of DI from a philosophical perspective. “Well, theoretically, differentiation is not teaching a concept at a level that is washed down, but it is teaching in a way that is compatible with both learning style of the student and maybe where the student is” (personal correspondence, March 11, 2009). There was an understanding that some may misunderstand the message, for Jamie said, “I suppose people do equate that with giving students a shorter assignment or maybe not having as high expectations in an assessment of some sort” (personal correspondence, March 11, 2009). At the same time, this teacher appeared to be beginning to understand that, as Tomlinson (2005a) argues, differentiation is about “ensuring that each student has the support he or she needs to succeed” (p. 266). Differentiation is not a matter of watering
down the curriculum and drawing attention to deficits. DI involves stating the overall goal of the lesson or unit and strategically differentiating for students the content, process, or product so that every student is able to reach that goal.

The comments from Jamie and Lane articulated a clear distinction between what these teachers envisioned DI to be. Jamie saw DI as a way to add more student choice and interest in his classroom. Lane saw it as a tool that would allow one to help the struggling students without others noticing. These interpretations influenced how they then thought about the need for transparency. For example, Jamie did not want to keep the student choice project secret because the process and product were differentiated for everyone and therefore did not call attention to anyone. The practice troubled Lane because DI was not yet seen as something for everyone’s learning and that made transparency an issue.

The team meetings ultimately ended with an unresolved concern about transparency. Lane commented, “I think ideally you wouldn’t want it to be transparent, wouldn’t you? I know they are humans so they (students) compare with one another and if they know that someone else is doing something different there is just a natural inclination to be jealous or something like that” (personal correspondence, March 11, 2009). Jamie again revealed a philosophical consideration by adding, “I don’t know. It would be nice if they were not. Everyone could do their own thing” (personal correspondence, March 11, 2009). This last comment illustrated that Jamie was contemplating a classroom that eliminated jealousy and allowed all students to work and progress at their own personal levels. A differentiated classroom has the tools to create this type of environment.

A couple select studies address the concern of transparency. Participants in Brighton’s (2003) study wrestled with the same concern. According to Brighton, her participants believed that all students should do the same thing in order to ensure equity and fairness for all. The participants in her study believed that differentiation of tasks would lead to student and parent complaints about inequality. The comments from my teacher participants suggested that they too struggled with this issue. As with Brighton’s participants, there was the misunderstanding that differentiation based on readiness meant lowering expectations and drawing out weaknesses. Schumm et al. (1995) found that their participants also felt that DI designed for specific students would bring attention to their disability or weaknesses, and thus,
lower self-esteem and performance. Consequently, this illustrates the need to clarify that DI involves more than solely helping slow learners.

Even these teachers who saw differentiation as needed and needed particularly for this class, struggled with how differentiation fit into their conception of teaching. Their concerns about transparency and stigma mirror those found in other research studies such as Brighton’s (2003) study with middle school teachers. Their conceptions of transparency affected their ability to differentiate. A move towards a more philosophical understanding of DI, however, made transparency less of a concern for one of the teachers.

**Grading**

Grading emerged as the second theme during this study. The tension between differentiation and fair grading came up during our very first meeting. Casey began that conversation by asking, “Do you think it’s fair to differentiate a...project grade?” (personal communication, September 18, 2008). Discussing a student in one of the classes who was experiencing some difficulties, Casey continued, “but (student) has worked his little butt off, but he doesn’t get it. And he’s put in so much effort...but if I hold him to the rubric they got passed out the first day, he’s gonna fail, and he’s put a tremendous amount of work into it.” This suggests that the teacher recognized the existing issues with the current grading system and was trying to figure out if and how DI would help. Casey currently utilized a grading system thought to be fair because it was the same for all students. As it was recognized that the current grading system was not working for this particular student because it was based solely on the final product and did not account for effort, there was still uncertainty as to whether or not differentiating would be helpful.

Casey then added, “But I don’t know how to grade him because he is gonna end up with the wrong water, and the wrong food supply. And yet he went and got (the animal) and he has a beautiful drawing, and he understands all the parts of (the animal)... He’s not missing anything...but he’s still failing” (personal correspondence, September 18, 2008). This student had the process as he had followed the necessary steps of the project; however, the content and product were failing because he ended up with the wrong supplies which resulted in a failing product. In this case, the product was intended to be the ultimate grade; however, there was uncertainty in her comment because this student was getting some of the components but was still failing the entire project.
On a similar note, Jamie’s focus was on product evaluation, however, there appeared to be the belief that grading depended upon an understanding of the students. Jamie suggested:

I think I just need time at the beginning to figure out what kids could or could not do...I always need to see it or how they react to me and that takes a little while until I can kind of understand them. I can differentiate as far as kids are responding to something...Like do they tell me these three things, is two enough, or do I need to have more than that for other kids, so that they are being stretched. That evaluation is always more difficult than the other parts. (personal correspondence, March 11, 2009)

When I asked Jamie to explain for me what the grading piece would look like for this differentiated project, it was stated:

I have not figured out how that is going to happen. What I have been doing is, well, you know when you get to know kids, you kind of know what they can do, but I cannot quantify it. I cannot describe for you necessarily, ‘oh, this is good work.’ You can look at something and say, ‘oh, this is good work,’ but you cannot look at something that is out of your realm and say, ‘oh, this is not good work.’ But I can look at it and say that is for that kid. (personal communication, February 17, 2009)

In order to ensure that I understood Jamie correctly, I responded by inquiring, “So, it requires really knowing your students?” (personal communication, February 17, 2009). Jamie replied:

Yeah. What they are capable of...so all the projects have been scored one through ten. I think the lowest score I have given was a seven. I had given three 10’s. There have been over 100 projects, so no one has quite figured it out. (personal communication, February 17, 2009)

This suggests that Jamie was assessing student products based upon intuition of their abilities or the work Jamie had received from the students in previous lessons. Additionally, Jamie appeared to have a pretty strong understanding of DI and the implementation, yet was still working through what this might mean in terms of appropriate grading.

As this conversation progressed, it became even clearer that for this teacher grading was based on understanding student abilities. The fact that Jamie had mentioned earlier “no one has quite figured it out yet” (personal correspondence, February 17, 2009) led me to inquire about how expectations for student products were laid out for students from the beginning. Jamie explained:

Because they are all so different and the topics are so different, it is going to be really hard to come up with a set term. Plus, I want to make sure that I am not setting up one student as the example and everybody has to follow that. I am trying really hard to assess their work, but not be so critical of it...I have something in my head for a particular student, but then obviously we are throwing in bias. It is hard to get rid of bias on that and it is hard for me to set out a rubric for kids for every project. (personal communication, February 17, 2009)
I then addressed my interest in how Jamie relays to students the parameters of the project from the beginning by asking, “When students are introduced to this, how do they know how they are being evaluated?” (personal correspondence, February 17, 2009). Jamie replied:

Well, we just kind of worked through it. I said, ‘you can choose any project you want to do. I am looking for your best work, and we are looking for excellence. What would that be?’ And we described some of those things. That does not mean that they did them...I had a kid turn in five pictures on a piece of paper. Not exactly what we were looking for. It did not take him very long to do that, plus this is a kid that is a high achieving student that was just doing it to get it done. So we have to continually talk about that, so I cannot completely answer your question. I do not know. This is an area that we need to work on. (personal correspondence, February 17, 2009)

At the end of the conversation, Jamie added, “The rules are just learn something about world history stuff” (personal correspondence, February 17, 2009). There were no explicit expectations laid out from the beginning and a grading system was yet to be created. This conversation further illustrated uncertainty of what the teacher was requiring or wanting the students to be able to demonstrate from the classroom unit.

It appeared that Jamie felt confident enough in knowing the students to determine what was good work and what was not so good for a particular student. At the same time, Jamie left the project parameters very open for the students. This could be seen as positive as it allows students freedom and choice, yet as Jamie noted, there were no clear expectations set for students. Similar to the case with Casey, the ultimate goal of the unit was pretty open and unclear. This makes it difficult to go back and evaluate the students on their success with the original goal.

According to Tomlinson (2005a), teachers should clearly state what they want their students to learn before a lesson so that they can refer back to it when deciding whether or not their students are accomplishing the objectives. Pettig (2000) contends that teachers should not approach differentiation with just a “gut feeling of what students know or can do” (p. 16). Preplanning helps the teacher to decide appropriate goals and steps that can get that student to reach those goals. Tomlinson adds that students should not be graded with respect to their peers but according to how well they achieve their own personal learning goals. When grading students, the teacher should not grade a student relative to his or her classmates. Grades should reflect the student’s accomplishments, with regards to the teacher’s predetermined learning goals. The teacher should also determine that a student’s grade reflects his or her
accomplishments and not some other factor such as a poor assessment tool or inappropriate teaching methods.

DI literature also suggests that assessment become part of planning and take place throughout the entire lesson (Tomlinson, 1999a, 2005a). Tomlinson (2005a) articulates, “Preassessment and ongoing or formative assessment regularly inform teachers’ instructional plans” (p. 263) in differentiated classrooms. Tomlinson (1999a) states that assessment should not be about evaluating what a student knows at the end of the unit, but rather what a student knows today so that content, process, and product can be differentiated for tomorrow to ensure student success. Ongoing evaluation also helps the teacher to better understand his or her students, including their interests, zone of proximal development, and learning preferences so that differentiation can be implemented appropriately.

These teachers struggled with aligning evaluation and differentiation at the planning stage. As a result, concerns about fairness arose and there appeared to be a misunderstanding related to evaluation based on understanding students and preplanning to help with unit goals and objectives. These concerns and misunderstandings mirror those found in other research studies related to grading, equity, ongoing assessment, and preplanning (Tomlinson, 1999a, 2005a). Implications on how professional development on DI might consider these concerns and misunderstandings can be found in the Implications chapter.

**Self-efficacy**

According to Bandura (1994), “Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave” (p. 71). Those who see tasks as personal threats tend to shy away. Further, “When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to perform successfully” (p. 71). In this study, lack of experience and time, the challenges of teaching, and management concerns surfaced, in conjunction with, uncertainty and a lack of confidence.

Self-efficacy emerged as the third theme. A lack of experience at this particular grade level and with DI combined with the challenges of teaching, lack of time, and uncertainty in classroom management
skills in student-centered classrooms led to varying degrees of lack in teacher self-efficacy. During the first team meeting, Lane brought up his inexperience with middle school saying, “It’s new for me because I haven’t taught middle school here. It will be new for me in middle school. I haven’t taught middle school in a long time” (personal correspondence, September 18, 2008). Reiterating three times in one comment that middle school was a new experience indicates how much attention was placed on learning how to teach at this level. To begin to think about differentiating in addition to this may have felt overwhelming.

Not only did Lane reveal limited teaching experience at the 8th grade level, there was also limited training in and experience with DI. “But see, I have no formal training in any of this...For me it is difficult. I just don’t have the formal training nor do I have the resulting skills and knowledge” (personal communication, March 11, 2009). Lane laid it out clearly; if you don’t know what it is, you can’t do it. If you have an idea of what it is but not a complete understanding, your implementation is going to be a little shaky. You are going to hit roadblocks and feel a need to discuss the concerns and fears. This further demonstrates the challenges of teaching and trying to implement something new at the same time.

In a personal interview with Jessie, a discussion about the dynamics of the 8th grade class including the struggle to meet student needs surfaced. Jessie maintained, “I mean, maybe in the long run this will be better but in the short run, while you’re working with us, we’re all struggling, every one of us” (personal correspondence, November 19, 2008). Jessie mentioned that even confident peers with lots of experience had expressed uncertainty. The teachers not only recognized their own personal struggles, but the struggles of their colleagues as well. In a later conversation while discussing the diversity of students in the eighth grade class, Jessie remarked, “Where we need to differentiate everyday, and we try but we don’t know what we’re doing” (personal correspondence, September 18, 2008). These comments exhibited a lack of confidence in what was being done to address student need. A lack of experience at all levels resulted in a lack in self-efficacy and confidence in completing the task. Jessie illustrated this feeling of uncertainty during a later meeting by stating:

I think we might need to change mine (DI) because I think this is the one thing I probably do the best already, so I don’t know how, I mean, maybe I’m wrong. But I think that’s one of the things that I try to really work on hard. So I’m afraid that, but maybe I don’t and maybe I’m wrong. You know how the best parts of us are also the worst parts of us, so maybe I’m wrong. (personal correspondence, November 13, 2008)
Even teachers with a certain sense of self-efficacy could easily digress into uncertainty.

In a similar situation, Jamie discussed a vision of what differentiation could mean in the classroom, yet remarked, “That’s what I’m seeing differentiation as, and I can’t exactly figure out how to, I just don’t have the time to set it up” (personal correspondence, October 16, 2008). In addition to the feeling of not knowing how to do it, time is most certainly a factor and lack of it appears to impede the process. The research study began in mid-September of 2008. Jessie implemented his DI in mid-November, Lane shortly after in the beginning of December, and Jamie not until mid-January of 2009. The envisioning of DI, coming up with ideas for implementation, discussion of concerns, designing and preparing for the implementation, and actual implementation took time.

Moreover, concerns with classroom management were raised. As the teachers discussed a possible activity that one of them could try, Casey raised the uncertainty of what DI might lead to by claiming, “It’s a lot of management in an open class like that” (personal correspondence, October 16, 2008). This implies a hesitancy or uncertainty towards creating a more student-centered classroom. There appears to be a concern that this would lead to disorder requiring a strong management system. This statement reflects a possible impediment to providing a more differentiated, student-centered classroom.

Brighton (2003) claims “teachers’ self-efficacy and individual beliefs about their competence relative to content, their students, and the specific reform effort influence their willingness and ability to change” (p. 181). Here, the teacher with the least experience teaching at this level was clear that this lack of experience was affecting how DI was approached. Cohen (1990) claims that teacher implementation carries with it all past personal experiences of both teaching and learning. You can see that in this group of teachers, there is a desire to make changes and adapt lessons to accommodate student diversity. However, altering current teaching practices and beliefs is difficult, and being asked to change creates feelings of uncertainty, or a lack in self-efficacy especially if it’s a new practice that one has no experience and confidence in.

The data gathered and interpreted revealed that these teachers were aware of and cognizant of student diversity and felt a clear need to address it, especially with this particular class of students. Despite
their desire to implement DI, issues of experience, change, time, and management appeared to have created various levels of impediment to their implementation. Each teacher, even the most confident, at some point during the study demonstrated a lack in self-efficacy and a resulting conviction that the right change might not be made. As Bandura (1994) said, difficult tasks, when combined with poor self-efficacy, lead to a focus on personal inadequacy, obstacles that feel impossible, and unfavorable outcomes. If we want teachers to implement DI successfully, a concerted effort to address teacher self-efficacy with regards to DI is required. What this means for professional development is addressed in the following chapter.
CHAPTER 5
IMPLICATIONS

Implications arising from this data add to and support current suggestions for professional development on DI. The results from this study show that these teachers understood the diverse needs of the students in their classrooms and the importance of addressing these needs. Literature suggests, however, that implementation of DI in American classrooms is minimal. This study illustrated reasons for that lack of prevalence and difficulties that surfaced as DI was implemented. These results validate and expand current suggestions for appropriate professional development designed to encourage more widespread use of DI.

The dialogue of the teacher participants in this study indicated various reasons as to why the prevalence of DI may be lacking in classrooms. Issues of experience, uncertainty, time, and management stood as obstacles to their implementation of DI and impacted their feelings of self-efficacy. Lane was new to this age group so most efforts were going towards gaining a better understanding of teaching at the middle school level. Additionally, there was articulation of little knowledge and confidence in the area of DI. Jessie articulated that the effort was there, but there was uncertainty about what to do to address student need even from teachers with experience and confidence. Jamie expressed that time was a significant factor. Creating and implementing differentiation required time, and Jamie expressed that time was just not available. Casey made the point that projects and classrooms more centered on students had the possibility of creating management issues. These concerns lead to low teacher self-efficacy, which stood as barriers to implementation of DI.

Furthermore, it should be noted that the results of this study counter the notion that teachers are unknowing of student needs and find DI unfeasible (Tomlinson et al., 2003). Not only did these teachers see DI as possible and practical, regardless of the barriers and concerns, they also had an intuitive sense of what students would find engaging. For example, during student interviews, students indicated that they enjoyed classes that incorporated their interests, provided challenge that met their ability levels, and involved projects and working with partners. With regards to their DI implementation, Jamie incorporated student choice in order to provide more student interest in the classroom, Jessie included differentiating questions based on students’ abilities, and Lane integrated partner work that also focused on student ability
and challenge. These teachers knew which practices aligned with the interests and preferences of the students in their classrooms.

The issue of equity also surfaced as a barrier. Casey had difficulty rationalizing the use of an evaluation system that was not consistent for all students, but was differentiated. There was not yet a clear understanding of how differentiation could help in the design of an equitable classroom that focused on each student and not on evaluating each student with the same rubric.

Finally, the literature contends that high stakes testing and teacher accountability impede the use of DI (Anderson, 2007; Tomlinson, 2000, 2004a, 2005b; Tomlinson & Allan, 2000). The teachers in this study were not held to these same expectations; however, planning and implementing DI were still challenging. This suggests that even without the influences of testing and accountability, DI implementation is still challenging. Accountability and high-stakes testing likely only exacerbate the process and provide yet another barrier.

In addition to barriers that influence the implementation of DI, a number of misunderstandings surfaced. First of all, these teachers expressed a belief that a low degree of transparency was best because students would be uncomfortable if their peers were aware of the differentiation. It was clear that Lane felt transparent DI would draw attention to student deficits and lead to stigma. In actuality, student interviews revealed that while the students in this study recognized that their peers learned in different ways, they were unaware of their peers receiving accommodations, modifications, or DI. They expressed that all or most students in the classroom did exactly the same thing.

Another issue for these teachers was grading. Jamie appeared to have a pretty strong understanding of DI, yet there was still an indication of uncertainty with this particular piece. Discourse with Jamie illustrated a current effort towards creating an appropriate evaluation system for the student products, which were just as diverse as the students themselves. Expectations were not laid out from the beginning, and the grading system that was currently being used was based on intuition of student abilities.

Time was also a significant inconvenience. First, I was allotted only 30 minutes to present on DI to my teacher participants. I was not able to even begin to explain, much less demonstrate and clarify, what DI really is and the philosophy that it is built upon. Further, there was no time to allow for discussion and
processing as a group during or immediately after the presentation. The teachers received a list of practices that align with DI, examples of what DI could look like, and possible steps they may have considered to help them experiment with DI. Due to time constraints, a differentiated and comprehensive training on DI was not provided. Further, the study itself occurred over a seven-month time period. The complexities involved in DI necessitate a great deal more time. Consistent and prolonged time is needed to explore, question, dissect, plan, practice, and reflect upon DI practice and implementation.

In addition to my participants, I experienced a personal difficulty with implementing DI. For the past two years, I have researched DI and become a personal advocate who aims to implement it as much as I can. I still, however, face challenges. For example, I failed to recognize the specific needs of each of my participants. I did not take the time to better assess my participants and their understanding of DI before asking them to engage in and implement DI in their classrooms. In turn, I was unable to provide guidance and instruction at their individual zones of proximal development (Vygotsky, 1978), an example of my own challenges with differentiating my instruction and practice. Ideally it would have been helpful for me to assess the teachers' understanding in depth at the beginning of the study and then utilize that information appropriately to plan for teachers' development. Upon reflection, I understand it to be part of the growing process. I worked with the information I had, realizing, in retrospect, that this understanding was not visible before and only became available upon reflection. In the same way, the teachers implementing DI, needed time and support for this kind of reflection and examination to illuminate their experience with DI and avoid dismissing DI as not working on their first venture.

These examples illustrate that these teachers, including myself, experienced barriers and difficulties that made it more difficult to understand and implement DI. These examples demonstrate implications that should be considered when working with groups of teachers on DI. If supporters and trainers want DI to be adopted by and used effectively by teachers to meet the needs of diverse students, then teachers need to be supported and certain issues and barriers must be addressed during professional development and training.

Current literature suggests that professional development for teachers working to implement DI needs to be differentiated for the teacher participants (Hawkins, 2009; Tomlinson, 2005). This study
extends this proposal by suggesting that this differentiation should include an in depth assessment of teachers' current philosophies on teaching and learning, including an assessment of the specific needs of each teacher, and a flexible, responsive program that responds to teacher needs throughout. Through dialogue, the teachers in this study articulated particular philosophies about teaching and learning. For example, this study showed that fairness in grading was a concern. So long as one views equal as fair, DI will always be difficult to understand and implement as DI rests on the belief that students have different needs and these differences necessitate not equal practice, but equitable practices. Professional development that understands the philosophies of the participants can assist them in better understanding how their philosophy aligns with DI and the extent to which that philosophy needs to shift or expand in order to align with the philosophies that will allow them to encompass approaches such as DI that will support the learning of all students in their classroom. This assessment requires more than just a survey or other simple preassessment. This assessment requires a thorough reflection on dialogue between teachers, constant support for teachers to continually reflect on their own practice, and continual assessment of needs and circumstances.

Understanding the specific needs of teachers is equally important so that professional development can be differentiated accordingly. Just as students have more success when instruction matches their zone of proximal development (Vygotsky, 1978), instruction for teachers must align within their zones. In this study, teachers specifically requested materials that aligned with the DI they were planning to implement. Professional development must be aware that teachers seek guidance, and in order to provide that guidance, appropriate materials must be available and offered accordingly. Further, the instructor must anticipate participant questions (Hawkins, 2009), so that he or she is prepared and able to answer and support all questions or concerns. These teachers often asked me to present my own personal feelings and how research would address the particular concerns. These teachers saw me as an expert who could provide the support and answers to these questions. This likely originates from past professional development experiences where the expert/trainer extends on the participants the knowledge and literature. What this fails to do is encourage the participants to work through the issues themselves and uncover where the particular concerns are arising. Professional development on DI must steer away from solely imparting
knowledge to participants but rather encourage the participants to continually reflect, evaluate, and delve deeper into the true practice of DI. This encourages them to adapt and build a philosophy that aligns with DI, thus increasing the chances that DI can become more accepted and practiced in the classroom.

All of these components require an abundance of time. Participants need time to understand and grapple with the philosophy behind DI. In this study, the short time frame did not allow us to fully immerse ourselves in the components and philosophy surrounding DI. Tomlinson et al. (2003) contend, “Research and theory on change in schools indicates that such a scope of change is profoundly difficult, calling for persistent, sustained leadership and support for the change” (p.135). As I stated previously, my failure to illustrate to my participants a true and honest picture of DI and the philosophy surrounding it influenced their approach to and implementation of DI. Implementing DI is a continuous process. Teachers need to have the time to think through and plan, practice and experiment, and then evaluate and modify their practices. Furthermore, teachers need time to reflect on their practice, progress, and teaching philosophy including where DI fits into it. These teachers found transparency and grading to be issues that needed to be discussed and addressed. Furthermore, self-efficacy arose as a barrier. Professional development needs to factor in these components, and others that will likely arise, and allow time for them to be understood and resolved.

Professional development on DI for teachers provides the perfect opportunity to model and illustrate what DI looks like and involves. Teachers' needs, abilities, philosophies, and preferences need to be factored in and consistently addressed and examined just as students' needs must be addressed in order to provide an appropriate education. Professional development needs to be differentiated according to the participants, but this needs to include a deep, encompassing effort that extends beyond the one-time, standard, lecture-type series that lacks understanding of the participants' present levels of understanding. This type of professional development necessitates a considerable amount of time that allows all components to be included. This study did not provide that time, and the results suggested that teacher needs were not met and a true understanding of DI was not communicated. With appropriate time and support, teacher self-efficacy and understanding can be strengthened, personal philosophies can become more aligned with DI, and the current practice of quality DI can slowly improve.
As a future school psychologist, I will be working very closely with teachers and asking them to try new things to better meet the needs of their students. Knowing and understanding the themes and issues that arise when implementing DI will help me better understand how to support teachers during times of change and when trying new things. I will make it a point to assess and evaluate at the forefront the needs and preferences of those I work with so that I can provide for them differentiated instruction and services. Furthermore, when asked to provide professional development or training, this information will help me prepare and instruct appropriately. I will know to again assess my participants from the beginning and throughout. I will prepare for questions and concerns so that I can address them immediately and provide accurate information to those involved. I will allow teachers time to process, plan, implement, and evaluate the new practice or suggestion, and I will make sure I am providing continuous support. Finally, I will continue to build and reflect upon my personal DI practices and monitor the progress of my skills through reflection, practice, and honest evaluation.

Future Research

Tomlinson et al. (2003) assert, “For researchers with an interest in this area of inquiry, the possibilities are virtually without limit” (p.136). This study illustrates the need to develop ways of obtaining a deeper understanding of teacher needs as they relate to professional development on DI. Preassessment and ongoing assessment need to be obtained from sources that extend beyond surveys and other simpler measures. Professional development needs to encompass a model that digs deeper and provides more profound and meaningful information that allows the trainer to create a more trainee-centered approach to professional development on DI.

It is also imperative that future studies continue to investigate the concerns and questions that teachers bring up as they work to implement DI. The number of participants in this study was small but appropriate. The smaller size allowed the researcher to work more closely with the participants, therefore gaining a better understanding of their process. Future research necessitates duplication of this design, in order to dig even deeper and continue to add to the understanding of what teachers need in order to better address the needs of their students by implementing DI.
It is important to then study the outcomes of professional development and training experiences that address these and other identified concerns and issues. This will help us to better understand the effectiveness of training that plans for and addresses these issues and allows us to create professional development that is even more responsive to teachers' needs.

Current education standards expect educators to utilize evidenced-based practices that have been proven effective (Spooner et al., 2007). If proponents of DI want school leaders advocating for these practices, they must find reliable ways to measure its effectiveness. This study did not address this, so it is important that future research efforts examine this aspect of DI.

Student input may be one way to collect some of this empirical data. This research study attempted to incorporate student voice and outcomes by interviewing and surveying students. Due to difficulty in obtaining permission and time constraints, this information was limited. Student input was utilized as a secondary data source to support the teacher data. Future efforts could focus on student data as a primary data source. Outcomes related to achievement, interest, and enjoyment, in differentiated classrooms could provide valuable insight.

Conclusion

This study aspired to better understand the experiences of teachers working to implement DI in their classrooms, a component missing in the current literature on DI. Teachers recognize the need to address student diversity; however there appears to be a lack in application of strategies that do this. My work with these teacher participants offered actual experience and practice from teachers. Three themes emerged, including transparency, grading, and self-efficacy. This information provides valuable insight for professional development and training experiences related to DI and for me as a future school psychologist and advocate of DI.
REFERENCES


APPENDIX A

PARENT AND STUDENT LETTER

Hello eighth grade students and parents. My name is Tonya Keefer, and I am a graduate student at (name of university). I will be completing a research project this semester with the eighth grade teachers at (name of school) and you, the eighth grade students, with you and your parents’ permission. This research study has been approved by the (name of university) Institutional Review Board and (name of school). The main topic of my research project is differentiated instruction. Differentiating instruction is one way that teachers can meet the different needs of the diverse learners in their classrooms. My main focus is on the teachers and how they chose to implement differentiated instruction in their classrooms. I also want to see if and how this practice affects students’ attitudes towards school, if they notice the changes, and how they interpret these new practices. To do this, I am asking the students to complete a survey at the beginning of the school year, at midterm, and at the end of the semester. Each administration should take no more than 10-15 minutes. I will administer these surveys at the school, and codes will be used in place of student names. Finally, I will ask four or five students to participate in a 30 minute audio taped interview with me at the end of the semester. I will ask these students questions about their classrooms, changes they have noticed throughout the semester, activities and practices they like, things they do not like, and their overall impression of school.

This research will allow eighth grade students to experience the use of differentiated instruction in their classes with the possibility of increasing their attitudes towards school. Additionally, students that choose to participate will have the opportunity to share valuable student input which will add to the literature on this topic. Choosing to participate or to decline participation will in no way affect your status at (name of school) now or in the future. There is no risk involved in this research study. Codes and pseudonyms will be used in place of all names so that privacy and confidentiality of all participants is maintained. You have the right to decline participation at any point during the study. Results of the study will be shared with participating teachers and administration at (name of school). Interested parents and students may also request this information.
Included in this letter, you will find a parent permission form. These also include a short
description of the study and other important information. I ask that you please complete and return the
parent form should you choose to allow your student to participate or not. Make sure to indicate ‘yes’ or
‘no’ for participation. Students who receive parent permission will be asked to complete a permission form
at school. Students, who return a signed permission form, indicating participation or nonparticipation, will
receive a small treat. My contact information is listed for you should you have any questions or concerns at
any point during the fall semester. Thank you for your time and consideration.
Good (morning, afternoon). My name is Tonya Keefer, and I am a graduate student at (name of university). I am interested in completing a research project next semester with you and your eighth-grade students. This research study has been approved by the (name of university) Institutional Review Board and (name of school). The main topic of my research project is differentiated instruction. As you may know, differentiating instruction is one way that you can meet the needs of the diverse learners in your classrooms. My main focus of this project is on you, the teacher, and how you chose to implement differentiated instruction in your classroom and what this experience is like for you. I also want to see if and how this practice affects your students’ attitudes towards school, if they notice the changes, and how they interpret these new practices. To do this, I am asking that you complete a survey at the beginning of the semester and at the end detailing your current use of, understanding of, and attitude towards differentiated instruction. This should take approximately 20 minutes. I will then conduct an audio recorded interview with you on your thoughts about differentiated instruction, professional development, your students, and other aspects related to these topics. This will take no more than 30 minutes. I will provide a 60 minute audio recorded overview of differentiated instruction. You will then be asked to choose two to three new differentiated practices to incorporate into your classroom. We will meet twice per month as a group to talk about concerns, ideas, thoughts, and issues surrounding the implementation of these new practices. You will also have the opportunity to collaborate with one another, sharing ideas, resources, successes, and concerns. These meetings will be audio taped with permission from all participants. I will provide you with any needed materials and references to help with implementation. In addition to these activities, I will set up an online forum where you and the other teachers can communicate and submit postings regarding your experiences with implementing differentiated practices. You will be encouraged to post anonymously questions, concerns, comments, stories, successes, frustrations, etc. I will observe in your classroom at least once to collect observational data about DI practices being utilized, student responses, classroom atmosphere, interactions between you and your students, and other observations of note. These observations will cover approximately two class periods. During the spring semester I will
conduct an audio taped follow-up with you in order to review the results and gather any further data. This will take approximately 30 minutes.

Your eighth grade students that choose to participate will be completing a student survey three times throughout the semester with each administration taking approximately 15-20 minutes to complete. Additionally, four to five students will be asked to participate in a 30 minute audio taped interview with me at the end of the semester. I will ask these students questions about their classrooms, changes they have noticed throughout the semester, activities and practices they like, things they do not like, and their overall impression of school.

This research will give you the opportunity to learn more about differentiated instruction and the opportunity to implement it into your classroom possibly improving your teaching skills. You will also have the opportunity to collaborate with the other core, eighth grade teachers while implementing differentiated instruction. Your students will experience the use of differentiated instruction in their classes with the possibility of increasing their attitudes towards school. Choosing to participate or to decline participation will in no way affect your status at (name of school) now or in the future. There is no risk involved in this research study. Codes and pseudonyms will be used in place of all names so that privacy and confidentiality of all participants is maintained. You have the right to decline participation at any point during the study. Results of the study will be shared with participating teachers and administration at (name of school). Interested parents and students may also request this information.

Here is a teacher permission form. These also include a short description of the study and other important information. I ask that you please sign and return one copy to me today should you choose to participate. You may keep the other copy for yourself. My contact information is listed for you should you have any questions or concerns at any point during the fall semester. Thank you for your time and consideration.
APPENDIX C

TEACHER CONSENT FORM

(Name of University)

HUMAN PARTICIPANTS REVIEW

TEACHER PERMISSION

Middle School Teachers' Experiences with Differentiated Instruction and its Corollary Effects on Students' School Attitude

Principal Investigator: Tonya Keefer

Invitation to Participate

You are invited to participate in a research project conducted through the (name of university). The University requires that you give your signed agreement to participate in this project. The following information is provided to help you make an informed decision about whether or not to participate.

Nature and Purpose

The proposed study will examine how middle school teachers’ experience differentiated instruction as they implement it into their classrooms and its corollary effects on student attitudes towards school over one semester. Differentiating instruction is one way that teachers can meet the needs of diverse learners. First, it is important to understand the personal accounts of those who have and are currently implementing DI. This information may lead to valuable insights on how to foster teachers’ use of DI and how to make it both possible and successful. Second, students’ thoughts and opinions on DI could provide teachers and researchers with valuable information regarding DI. The students are the recipients of DI efforts so measuring and incorporating their feelings and understanding of DI practices could provide useful data. Additionally, correlating student attitudes towards school with the presence of DI may present validation of the effects of DI.

Explanation of Procedures

You will be asked to complete a self-report questionnaire designed to measure your current use of, understanding of, and attitude towards differentiated instruction. This will be administered before the 2008-09 school year begins and should take approximately 20 minutes. The researcher will also meet with you
separately and conduct an audio recorded interview with you on your thoughts about DI, professional development, your students, and other aspects related to these topics. This will take no more than 30 minutes. You will be given a code in place of your name that only the researcher will know.

The researcher will then provide a one hour, audio taped presentation on differentiated instruction for you and the other participating eighth grade, core teachers. Following the presentation, you will be asked to select, implement, and report regularly on two to three new types of differentiated instruction for your 8th grade class for the new semester (August 2008-December 2008). These forms will list headings pertaining to differentiating content, process, and product according to student interests, preferences, and readiness levels. The researcher will also provide you with references and examples to help with selection and implementation. Lesson plans and planning systems provided in the literature will be offered as well. You will have the freedom to choose practices and planning systems as you feel are most appropriate for your classroom and teaching preferences.

Eighth grade students and parents will receive an explanation of the research proposal and participation of students will be requested. On the first day of the 2008-09 school year, the participating 8th grade students will be asked to complete the My Class Activities instrument (Gentry & Gable, 2001) to measure their attitudes towards school. The researcher will administer the student survey, which only takes 10-15 minutes. The students will also complete the survey at midterm and at the end of the semester.

The researcher will meet with you and the other teachers as a group two times per month for 15-20 minutes. The meetings will be audio taped with your permission. Before the meeting or at the meeting, you will be asked to fill out a sheet listing which DI practices you have been utilizing in your classroom, including a short description. Codes will be used in place of names. At the meeting we will discuss concerns, ideas, thoughts, and issues surrounding the implementation of these new practices. You will also have the opportunity to collaborate with one another, sharing ideas, resources, successes, and concerns. The researcher will provide you with any needed material and references to help with implementation. Audio taped meetings will be transcribed.

The researcher will set up an online forum where you and the other teachers can communicate and submit postings regarding your experiences with implementing DI practices. You will be encouraged to
post anonymously questions, concerns, comments, stories, successes, frustrations, etc. The researcher will utilize this as a source for pertinent data.

The researcher will also conduct a classroom observation at least once in your classroom. The intent is to collect observational data about DI practices being utilized, student responses, classroom atmosphere, teacher actions, and interactions between teachers and students and other observations of note. These observations will cover approximately two class periods.

The researcher will also ask three to four students to participate in a personal interview with the researcher. This interview will consist of questions about their classrooms, changes they have noticed throughout the semester, activities and practices they like, things they do not like, and their overall impression of school. These interviews will take no more than 30 minutes.

At the end of the fall 2008 semester, during the last week of school, you will be asked to complete the same self-report survey to see how your use of, attitudes towards, and understanding of differentiated instruction has changed. This will take approximately 20 minutes.

Finally, the researcher will conduct audio recorded member checks during the middle of the spring 2009 semester. This 30 minute meeting will allow the researcher to share insights from the research data with you and gather feedback from you to provide additional fidelity. In addition, the researcher will inquire about your continued use of DI practices. All data collected may be used for future research.

Discomfort and Risks

Risks to participation are minimal and similar to those experienced in day-to-day life. The researcher intends to provide you with support and resources to help ease the burden of implementing new practices into your classroom.

Benefits and Compensation

By participating in this study, you will have the opportunity to learn about differentiated instruction, a teaching practice that respects student diversity, and incorporate it into your classrooms possibly improving your teaching skills. You will also have the opportunity to collaborate with the other core, eighth grade teachers while implementing differentiated instruction. Your students participating in the
study will experience the use of differentiated instruction in their classes with the possibility of increasing their engagement in learning and positive attitudes towards school.

Confidentiality

Information obtained from this study that could identify you will be kept confidential. Codes and/or pseudonyms will be used in place of names. The summarized findings with no identifying information may be published in an academic journal or presented at a scholarly conference.

Right to Refuse or Withdraw:

Your participation is completely voluntary. You are free to withdraw from participation at any time. You may also choose not to participate at all, and by doing so, you will not be penalized.

Questions

If you have questions about the study or desire information in the future regarding your participation or the study generally, you may contact Tonya Keefer at (phone number). You may also contact the project investigator’s faculty advisor (name) at the Department of Educational Psychology, (name of university) (phone number). You can also contact the office of the IRB Administrator, (name of university), at (phone number), for answers to questions about rights of research participants and the participant review process.

Agreement

I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I acknowledge that I have received a copy of this consent statement. I am 18 years of age or older.

(Signature of participant) (Date)

(Printed name of participant)

(Signature of investigator) (Date)

(Signature of instructor/advisor) (Date)
APPENDIX D

STUDENT CONSENT FORM

(Name of university)

Human Participants Review

Informed Assent

For older child approximately 11-17 years old

Project Title: Middle School Teachers' Experiences with Differentiated Instruction and its Corollary Effects on Students' School Attitude

Name of Principal Investigator(s): Tonya Keefer

I, ________________, have been told that one of my parents/guardians has given his/her permission for me to participate in a project about including students' interest, choice, enjoyment, and challenge into my core classes. I will complete a survey three times during the fall 2008 semester that will measure my attitudes towards school. I may also be asked to participate in an audio recorded interview with the principal researcher at the end of the first semester.

I understand that my participation is voluntary. I have been told that I can stop participating in this project at any time. If I choose to stop or decide that I don't want to participate in this project at all, nothing bad will happen to me. My grade/treatment/care will not be affected in any way.

________________________________________________________________________

Name Date
APPENDIX E

PARENT/GUARDIAN CONSENT FORM

(Name of university)

HUMAN PARTICIPANTS REVIEW

PARENTAL PERMISSION

Invitation to Participate

Your child has been invited to participate in a research project conducted through the (name of university). The University requires that you give your signed agreement to allow your child to participate in this project. The following information is provided to help you make an informed decision whether or not to participate.

Nature and Purpose

The proposed study will examine how middle school teachers' experience differentiated instruction as they implement it into their classrooms. Differentiating instruction is one way that teachers can meet the needs of diverse learners. Additionally, the researcher will look at how this affects student attitudes towards school over one semester. Students who are more interested in school tend to be more engaged, and students that are more engaged learn more in school. If teachers can learn strategies for increasing student engagement then students will learn more.

Explanation of Procedures

Your child’s core teachers will be asked to implement a practice called differentiated instruction into their classrooms. This practice incorporates students’ interests, preferences, and readiness levels so that what students are learning, how they are learning it, and how they show what they have learned is adapted to meet the needs of the student. It is suggested as one way to account for the diverse needs of all students in the classroom.

At the beginning of the 2008-09 school year, your child will be asked to complete the My Class Activities instrument (Gentry & Gable, 2001) to measure their attitudes towards school. The researcher will administer the student survey, which only takes 10-15 minutes. The students will also complete the survey
at midterm and at the end of the semester. The researcher will analyze this data to see if and how students’ attitudes towards school have changed.

Your child may also be asked to participate in a 30 minute audio recorded interview with the researcher at the end of the first semester. This interview will consist of questions about their classrooms, changes they have noticed throughout the semester, activities and practices they like, things they do not like, and their overall impression of school.

Codes and pseudonyms will be used in place of student names to remove any identifiers. All data will be kept safe and confidential and only the research team will have access to it. Data may be used in future studies.

Discomfort and Risks

There are no foreseeable risks to participation. No class content or curriculum will be missed should you or your child choose not to participate.

Benefits

By participating in this study, your child will experience their teachers’ use of differentiated instruction in their classes with the possibility of increasing their engagement in learning and positive attitudes towards school.

Confidentiality

Information obtained during this study which could identify your child will be kept strictly confidential. Codes and/or pseudonyms will be used in place of names. The summarized findings with no identifying information may be published in an academic journal or presented at a scholarly conference.

Right to Refuse or Withdraw

Your child’s participation is completely voluntary. He or she is free to withdraw from participation at any time or to choose not to participate at all, and by doing so, your child will not be penalized or lose benefits to which he/she is otherwise entitled.

Questions

If you have questions about the study or desire information in the future regarding your child’s participation or the study, you can contact Tonya Keefer at (phone number) or the project investigator’s
faculty advisor (name) at the Department of Educational Psychology, (name of university) (phone number). You can also contact the office of the Human Participants Coordinator, (name of university), at (phone number), for answers to questions about rights of research participants and the participant review process.

Agreement or Refusal Statement (please check appropriate statement below and sign)

_____ I am fully aware of the nature and extent of my child's participation in this project as stated above and the possible risks arising from it. I hereby agree to allow my son/daughter to participate in this project. I have received a copy of this form.

_____ I do not allow my son/daughter to participate in this project.

(Signature of parent/legal guardian) (Date)

(Printed name of parent/legal guardian)

(Printed name of child participant)

(Signature of investigator) (Date)

(Signature of instructor/advisor) (Date)
## APPENDIX F

### TEACHER SURVEY

ID# ______________________ Number of brothers & sisters: __________ Date: __________

(ID#-List the first 3 letters of your mother's maiden name and the first three letters of your hometown)

**DIRECTIONS:**
Circle the number that best describes your answer with 5 = "Frequently" or "Very" and 1 = "Not at all." Your participation is voluntary. You do not have to answer every question.

### SECTION I:

A. How often do you use the strategies/techniques listed below to plan for and accommodate individual differences in the classroom?

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<tr>
<th>Strategy/Technique</th>
<th>Not at all</th>
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<tr>
<td>1. Assess students' readiness for learning, interests, and styles of learning</td>
<td>1</td>
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<td>2. Differentiate lessons using major concepts and generalizations</td>
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<td>3. Use a variety of teaching materials rather than standard texts</td>
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<td>4. Use various support mechanisms (e.g., reading buddies, graphic organizers, study guides)</td>
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<td>5. Use tiered assignments</td>
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<td>6. Use cooperative and flexible grouping</td>
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<td>2</td>
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<td>7. Vary tasks by students' readiness levels, interest levels, and/or learning styles</td>
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<tr>
<td>8. Vary questions (based on students' readiness, interests, and/or learning styles)</td>
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<td>2</td>
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<tr>
<td>9. Use different product assignments based on individual (or group) readiness, learning needs, and/or interests</td>
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<td>10. Allow for a wide range of product alternatives (e.g., oral, visual, musical, spatial)</td>
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<td>11. Use both formative and summative evaluation</td>
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<td>12. Use performance-based assessment</td>
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<td>13. Use instructional strategies to differentiate instruction (e.g., curriculum compacting, independent projects, interest centers, learning centers, student contracts)</td>
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<td>14. Use instructional technology to differentiate instruction.</td>
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<td>15. Adapt lessons for individual students</td>
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<td>16. Provide accommodations and modifications for individual student evaluation</td>
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<td>17. Acquire and use knowledge of cultural perspectives in planning and delivering instruction</td>
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18. Use instructional materials that demonstrate that you promote diversity (e.g., multicultural literature, posters, manipulatives).

19. Assess students' readiness for learning, interests, and styles of learning.

20. Differentiate lessons using major concepts and generalizations.

21. Use a variety of teaching materials rather than standard texts.

22. Use various support mechanisms (e.g., reading buddies, graphic organizers, study guides).

23. Use tiered assignments.

24. Use cooperative and flexible grouping.

25. Vary tasks by students' readiness levels, interest levels, and/or learning styles.

26. Vary questions (based on students' readiness, interests, and/or learning styles).

27. Use different product assignments based on individual (or group) readiness, learning needs, and/or interests.

28. Allow for a wide range of product alternatives (e.g., oral, visual, musical, spatial).

29. Use both formative and summative evaluation.

30. Use performance-based assessment.

31. Use instructional strategies to differentiate instruction (e.g., curriculum compacting, independent projects, interest centers, learning centers, student contracts).

32. Use instructional technology to differentiate instruction.

33. Adapt lessons for individual students.

34. Provide accommodations and modifications for individual student evaluation.

35. Acquire and use knowledge of cultural perspectives in planning and delivering instruction.

36. Use instructional materials that demonstrate that you promote diversity (e.g., multicultural literature, posters, manipulatives).

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C. Do you think that the use of each strategy/technique listed below is necessary to effectively teach all students in your classes?

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</thead>
<tbody>
<tr>
<td>37.</td>
<td>Assess students' readiness for learning, interests, and styles of learning</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>38.</td>
<td>Differentiate lessons using major concepts and generalizations</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>39.</td>
<td>Use a variety of teaching materials rather than standard texts</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40.</td>
<td>Use various support mechanisms (e.g., reading buddies, graphic organizers, study guides)</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>41.</td>
<td>Use tiered assignments</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>42.</td>
<td>Use cooperative and flexible grouping</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>43.</td>
<td>Vary tasks by students' readiness levels, interest levels, and/or learning styles</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>44.</td>
<td>Vary questions (based on students' readiness, interests, and/or learning styles)</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>45.</td>
<td>Use different product assignments based on individual (or group) readiness, learning needs, and/or interests</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>46.</td>
<td>Allow for a wide range of product alternatives (e.g., oral, visual, musical, spatial)</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>47.</td>
<td>Use both formative and summative evaluation</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>48.</td>
<td>Use performance-based assessment</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>49.</td>
<td>Use instructional strategies to differentiate instruction (e.g., curriculum compacting, independent projects, interest centers, learning centers, student contracts)</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>50.</td>
<td>Use instructional technology to differentiate instruction</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>51.</td>
<td>Adapt lessons for individual students</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>52.</td>
<td>Provide accommodations and modifications for individual student evaluation</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>53.</td>
<td>Acquire and use knowledge of cultural perspectives in planning and delivering instruction</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>54.</td>
<td>Use instructional materials that demonstrate that you promote diversity (e.g., multicultural literature, posters, manipulatives)</td>
<td>Not At All</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
SECTION II:

Directions: Please define the following terms in your own words:

* Diversity

* Inclusion

* Differentiated instruction

* Accommodations

* Modifications

SECTION III:

Please complete the demographic information requested below:

ALL PARTICIPANTS (unless otherwise indicated):

Gender (check one):
- Male
- Female

Ethnicity (check one):
- African American
- Caucasian
- Asian
- Native American
- Hispanic
- Other

Training in Differentiated Instruction: (indicate number for all that apply)
- Substantial part of university course
- Workshop
- Study group
- Readings (Number of articles, books)
- Other (please specify)
Years of classroom experience (check one, not including 2003-2004):
- 0
- 1-3
- 4-6
- 7-19
- 20 or more

Grade level currently teaching: (check one)
- Lower elementary
- Upper elementary
- Middle/junior high
- High school
- University

If teacher candidate/graduate student, indicate status: (check one)
- Graduate, seeking master's degree
- Graduate, non-degree
- Undergraduate, seeking certification in
  - elementary education
  - elementary/special education
  - secondary education

If public school faculty, indicate status (check all that apply)
- General education teacher
- General education teacher/inclusion setting
- Special education teacher
- Special education teacher/inclusion setting
- Student teaching supervisor
- Administrator
- Other (please specify)

If university faculty, indicate status (check one)
- Full-time faculty
- Student teaching supervisor
- Adjunct faculty
- Other (please specify)

Master's degree: Y   N   If yes, what area?
Ed.D./Ph.D. Y   N   If yes, what area?

School system of employment: __________________________

Position: __________________________________

Thank you very much for your time in completing this questionnaire. Please return the completed form to the workshop presenter or a facilitator.
APPENDIX G
STUDENT SURVEY

We would like to know how you feel about your class activities. Read each sentence and indicate how often this happens for you in your class by coloring in the doughnut. There are no right or wrong answers. Your answers will be kept secret. Remember to color in a doughnut for each sentence.

Example: My class is enjoyable.

In the example below, the person indicated that his/her class is often enjoyable.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What I do in my class fits my interests.</td>
<td></td>
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<tr>
<td>2. I have an opportunity to work on things in my class that interest me.</td>
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<tr>
<td>3. What I do in my class gives me interesting and new ideas.</td>
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<td>4. I study interesting topics in my class.</td>
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<td>5. The teacher involves me in interesting learning activities.</td>
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<td>6. What I learn in my class is interesting to me.</td>
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<td>7. What I do in my class is interesting.</td>
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<td>8. My class has helped me explore my interests.</td>
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<td>9. The activities I do in my class are challenging.</td>
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<td>10. I have to think to solve problems in my class.</td>
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</table>

Please continue on the back
<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tbody>
<tr>
<td>11. I use challenging materials and books in my class.</td>
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<td>12. I challenge myself by trying new things.</td>
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<td>13. My work can make a difference.</td>
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<td>14. I find the work in this classdemanding.</td>
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<tr>
<td>15. I am challenged to do my best in class.</td>
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<tr>
<td>16. What we do in class fits my abilities.</td>
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<td>17. This class is difficult.</td>
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<td>18. I can choose to work in a group.</td>
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<td>19. I can choose to work alone.</td>
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<td>20. When we work together, I can choose my partners.</td>
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<td>21. I can choose my own projects.</td>
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<td>22. When there are many jobs, I can choose the ones that suit me.</td>
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<tr>
<td>23. I can choose materials to work with in the class.</td>
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<td>24. I can choose an audience for my product.</td>
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<td>25. I look forward to my class.</td>
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<tr>
<td>26. I have fun in my class.</td>
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<tr>
<td>27. The teacher makes learning fun.</td>
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<tr>
<td>28. I like what I do in my class.</td>
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<td>29. I like working in my class.</td>
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</tr>
<tr>
<td>30. The activities I do in my class are enjoyable.</td>
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<tr>
<td>31. I like the projects I work on in my class.</td>
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</tbody>
</table>