An Initial Analysis of Differentiated Instruction in Pre-Service Early Childhood Teacher Education

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Abstract

Differentiated instruction, or recognizing students’ individual strengths and needs, and teaching them accordingly, is the essence of “good teaching.” It is the means by which all classrooms can be more successful for it promotes access to the curriculum for all students including those with disabilities. The aim of this study was to gather information from early childhood teachers working with children in pre-k through 2nd grade regarding their experiences related to their training in and use of differentiated instruction. The results support a greater understanding of how pre-service programs address differentiated strategies and the link between theory and practice.

Keywords: differentiation, early childhood, pre-service teacher education

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Differentiated instruction, or recognizing students’ individual strengths and needs, and teaching them accordingly, is the essence of “good teaching.” It is the means by which all classrooms can be more successful for it promotes access to the curriculum for all students, including those with disabilities. However, not all teachers are familiar with the basic tenets of differentiation, and much of this has to do with their pre-service preparation. It is essential that teachers have the skills, knowledge, and confidence to develop and incorporate these strategies into their pedagogy. Misconceptions abound, for example, the belief that differentiation of instruction occurs when a student leaves the classroom to work with a specialist. Because of such misunderstandings, children with diverse learning needs all too often do not experience success in the classroom. Further, children whose learning differences are not as apparent, but who diverge in their abilities from the hypothetical “typical” child, are similarly not having their educational needs addressed.

Tomlinson and McTighe (2006) stated that the “primary goal [of differentiated instruction] is ensuring that teachers focus on processes and procedures that ensure effective learning for varied individuals” (p. 3). With specific regard to early childhood special education, Kaderavek (2009) broadly discussed the need for early childhood educators to incorporate differentiated instruction in their teaching as a way of “helping learners access the curriculum in meaningful ways” (p. 404). This is indeed the goal, as it raises the bar for all children; it requires the planning and development of more effective curricula. To reach this goal, Davis (2011) identified several practices teachers can implement to “customize” educational programming for diverse learners. First, use information about students’ interests to design motivating lesson plans. Second, “letting students fulfill curriculum requirements by doing everything from writing a traditional essay to creating a video or a website” (p. 10). Third, use technology as a medium to individualize instruction that enables students to work at their own pace until they master the material.

A basic premise of differentiated instruction is that students work within their zone of proximal development to maximize academic outcomes—it is not just about allowing students to draw or role-play. Teachers need to meet students at their current level of understanding, and scaffold their learning to a higher level (Bodrova & Leong, 2012). To achieve this outcome, differentiation of instruction uses specific strategies such as

1. Flexible grouping (e.g., large group, small heterogeneous or homogeneous groups, partners, and individual instruction);
2. Graphic organizers; creating extension activities within individual lessons;
3. Use of centers or work stations;
4. Use multiple formats for presenting information to students (e.g., discussion, modeling, visual cues),
5. Provide multiple options for expressing understanding of information (e.g., drawing, writing, speaking), as well as for assessing student work and teaching (Dee, 2011; Tomlinson & McTighe, 2006).
Tomlinson (2008) specifically emphasized that in order for differentiation of instruction to be successful, it must meet certain parameters. Among these are the need “for teachers to have clear learning goals that are rooted in content standards but crafted to ensure student engagement and understanding” (p. 27). Also critical to the successful implementation of differentiated instruction is the notion that “teachers must take into account who they are teaching . . . (with regard to) readiness, interest, learning profile and affect,” in order to make appropriate decisions about academic content and educational goals (Tomlinson, 2003, pp. 2-3). With this knowledge and understanding about what motivates individual children, teachers can move forward with differentiated instruction, and move away from the idealized, but faulty, one-size-fits-all curriculum. The three-tiered approach of high, medium, and low groupings is common in discussions of differentiated instruction (Heacox, 2002; Tomlinson, 1999). However, grouping students by ability is somewhat superficial; rather than an end-point, it is useful to think of it as a starting point for differentiating instruction. It is important to keep in mind that while some students achieve in one content area, they might not be as strong in another. Therefore, it is crucial that teachers spend time getting to know their students as individuals so that they can make informed decisions about how to teach meaningfully.

A study by Garriott, Miller, and Snyder (2003) found that approximately 50% of teachers felt unprepared and unqualified to teach children with special needs in a general education classroom. Yet, as classrooms become increasingly inclusive, the culture of the classroom is clearly changing and that means all teachers—those trained in general as well as special education—must be ready to teach learners with diverse needs. Achieving this will require teachers to develop both a skill set and a belief system that enables them to implement differentiated instruction successfully (Dee, 2011).

Teacher preparation programs are an ideal venue for influencing this change and teachers’ skill development. In fact, The National Association for the Education of Young Children (2010) requires that accredited institutions of higher education adopt standards that prepare candidates to be competent in the knowledge and disposition critical to successfully teaching a heterogeneous student body. Cooper, Kurtts, Baber and Vallecorsa (2008), in their study assessing how faculty in teacher education programs address teacher preparation and differentiation of instruction, noted that “most if not all accreditation organizations, both at the national and state levels, require documentation that specific standards on teaching diverse student populations and differentiating instruction to meet individualized student needs are demonstrated” (p. 173). Research on including strategies for differentiation in teacher preparation programs shows positive outcomes with regard to teaching impact. For example, Megay-Nespoli (2001) conducted a study of pre-service teachers in which she compared two groups—one participating in differentiation workshops and the other using typical teaching strategies in the classroom—on their sense of confidence and competence in implementing lessons for diverse groups of students. Results indicated that the differentiation group spent less time having to work individually with struggling children and felt more prepared and comfortable teaching to diverse populations rather than traditionally trained groups. As a result, the benefits of training future teachers in the practices of differentiated instruction are numerous and within reach, as long as they become part of pre-service curriculum courses. In fact, Dee (2011) noted that pre-service training is the optimal time to bring together and teach “concepts of...
differentiation and inclusion, (as it) promises to move educators closer to the ideal of instructional equity in meeting the needs of all learners in the general education classroom” (p. 54).

While the call for preparing teachers to meet the needs of all students has been well documented over the past decade (Edwards, Carr, & Siegel, 2006), history shows that it has been a slow process. It was not until the 1997 reauthorization of The Individuals with Disabilities Education Act (IDEA) that educational programs for students with disabilities aligned with the general education curriculum. For the first time, students with and without disabilities adhered to the same educational standards and curriculum. As the movement toward inclusive education progressed, it became evident that adaptations and modifications made for specific students with disabilities also had the potential for supporting many other students (Nolet & McLaughlin, 2005). In fact, “addressing the divergent needs of special populations increase (d) usability for everyone” (Rose & Meyer, 2002, para 4). Thus, the need to respond to heterogeneity in classrooms became more pressing. This in turn required teachers to develop a broad skill set to meet the needs of all students.

However, the skills that teachers need in order to achieve the desired outcomes of a truly inclusive classroom are still elusive. This is not a new struggle, as Washburn noted in 1953 when he asked how teachers could “best meet and most wisely use the wide range of differences in abilities, interests and development represented by the children” in the classroom (p. 138). More recently, Cooper et al. (2008) stated

special education teachers must know how to align curriculum, instruction, and assessment in ways similar to general education teachers” (p. 156), and that “general education teachers, as a whole, (must) become more knowledgeable and more skilled in strategies for teaching children who have been identified with learning differences as well as other struggling students. (p.158)

They also noted, “Providing teacher candidates with knowledge and skills to meet the diverse needs of students . . . becomes an essential component of teacher preparation programs” (p.157). For these reasons, it is imperative that teacher preparation programs go beyond incorporating teaching the methodologies and strategies that enable new teachers to respond to the needs of their diverse learners. Teacher preparation programs must provide opportunities for teacher candidates to implement differentiated instruction in the field. Developing skills associated with planning and implementing differentiated lessons in teacher preparation is vitally important for future teachers. This is most pressing in early childhood teacher preparation programs since it is within these primary grade classrooms that young children’s attitudes and school experiences form.

This study aims to answer questions related to early childhood teachers’ preparation in the use of differentiated instruction, and to clarify how their preparation program affects their understanding and use of such strategies in primary grade classrooms. Limited literature exists on differentiated instruction in early childhood teacher preparation programs. While there is a considerable body of literature that describes differentiated instruction and strategies for implementation (e.g., Tomlinson 2003, 2008), there is little research on pre-service training with
regard to these practices. Based on a review of the existing literature, there is a need for additional information to fill the gap between theory and practice.

Method

Participants

Sixteen participants in this study included early childhood teachers in and around New York City. The target population consisted of certified general and special education teachers in K-2 classrooms. Of the 44 questionnaires distributed to early childhood teachers, we distributed 12 at a teacher professional development workshop on differentiated instruction and then delivered an additional 32 to teacher mailboxes at the participating schools. In addition to general education K-2 classes, some of the teachers worked in team teaching classrooms, some in multi-age classes (e.g., 1st-2nd grade combined), and some taught in self-contained special education classrooms.

The study used a survey research methodology that allowed for the examination of teachers’ perceptions and beliefs. A qualitative analysis of teacher responses provided meaningful information regarding issues of pre-service training regarding differentiated instruction in the K-2nd grade classroom. The survey instrument consisted of a self-administered questionnaire with a brief section on demographic data. Demographic items gathered specific information on teacher characteristics, including pre-service preparation, certification, year of graduation, grade level taught and number of years teaching. Following the section on demographic information, five open-ended items asked teachers to discuss their pre-service preparation with regard to differentiated instruction and its utility for their current teaching practice. These questions assessed whether teachers applied differentiated strategies and, if so, for which students. A final question asked teachers to identify obstacles in the implementation of differentiated practices.

A modification of the procedures described in Dillman's Total Survey Method (1978) was the basis for the survey. Survey packets included a cover letter from the investigators, the questionnaire, an informed consent letter, and a self-addressed stamped envelope. A pencil and tea bag were also included in the packet for the teachers (to thank teachers and increase response rate). Informed consent included information about confidentiality. All schools granted respondents permission to participate. Distribution of the surveys occurred in two ways. First, with permission from the school superintendent, we delivered 32 questionnaires to K-2 teachers in three elementary schools. These schools were located in a small, ethnically and socio-economically diverse school district outside New York City. We placed the survey packets in each teacher’s mailbox. Three weeks later, we delivered packets to non-respondents to encourage return of the questionnaire. The second protocol for distributing surveys was slightly different. A second group of participants attended a professional seminar for early childhood and elementary school teachers in New York City. We distributed questionnaires to teachers who worked in K-2nd grade classrooms at the beginning of the seminar asking them to participate in the study by completing the questionnaires. Respondents had 15 minutes at the end of the seminar to complete the questionnaire.
Results

Sixteen teachers responded to the questionnaire for a total response rate of 36%. Respondents included teachers who had been in the field for as few as 6 months to as many as 32 years (M = 18 years). Of these teachers, five had their certification in special education (31%), two (12.5%) held general education certificates, while eight (50%) had dual certifications. One teacher did not specify their certification type. A slight majority of respondents (56%) taught in multi-age classrooms. Half (50%) taught in self-contained special education classrooms (e.g., K-2 self-contained or K special education). Thirty one percent of respondents taught in Integrated Co-Teaching classrooms (ICT) served by both a general education and special education teacher; 12.5% taught in general education classrooms; and, one respondent was a Special Education Teacher Support Service (SETSS) provider working with children with IEPs in general education classrooms. Eighty-seven percent of respondents had graduate level training.

Table 1. Demographic data

<table>
<thead>
<tr>
<th>Participant</th>
<th>Certification</th>
<th>Degree</th>
<th># Years Teaching</th>
<th>Current Grade Level</th>
<th>Classroom Setting</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>General Education</td>
<td>MA + 60</td>
<td>28</td>
<td>2nd</td>
<td>General Education</td>
</tr>
<tr>
<td>2</td>
<td>Special Education</td>
<td>MA</td>
<td>&lt;1</td>
<td>Mixed</td>
<td>ICT</td>
</tr>
<tr>
<td>3</td>
<td>Special Education</td>
<td>MA</td>
<td>5</td>
<td>K</td>
<td>ICT</td>
</tr>
<tr>
<td>4</td>
<td>Dual</td>
<td>MA</td>
<td>3.5</td>
<td>1st</td>
<td>ICT</td>
</tr>
<tr>
<td>5</td>
<td>Special Education</td>
<td>MA</td>
<td>20 +</td>
<td>2nd</td>
<td>Self-contained</td>
</tr>
<tr>
<td>6</td>
<td>Special Education</td>
<td>MS</td>
<td>5</td>
<td>Mixed</td>
<td>Self-contained</td>
</tr>
<tr>
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<td>Dual</td>
<td>MA</td>
<td>4</td>
<td>Mixed</td>
<td>ICT</td>
</tr>
<tr>
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<td>Dual</td>
<td>MA</td>
<td>8</td>
<td>2nd</td>
<td>Self-contained</td>
</tr>
<tr>
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<td>10</td>
<td>K</td>
<td>General Education</td>
</tr>
<tr>
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<td>K</td>
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<tr>
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<td>No response</td>
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<td>Mixed</td>
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<tr>
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<td>Mixed</td>
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</tr>
<tr>
<td>13</td>
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<td>&lt;1</td>
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<td>ICT</td>
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</tr>
<tr>
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<tr>
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<td>MA</td>
<td>6</td>
<td>Mixed</td>
<td>Self-contained</td>
</tr>
</tbody>
</table>

*ICT = Integrated Co-Teaching; **SETSS = Special Education Teacher Support Service

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The questionnaire contained five open-ended items regarding preparation and practices. Three major themes emerged upon analysis of all but one of the questions, as discussed in detail below: (1) the theory of differentiated instruction, and the gap between theory and practice; (2) tools and strategies; and (3) time and preparation.

The first question asked respondents to discuss what they learned about differentiated instruction in their pre-service teacher preparation programs. Five of the respondents (31%) noted that they did not learn about differentiated instruction in their teacher preparation programs, but learned about it through their on-going professional development. This response was most common for teachers in the field 15 or more years; however one teacher of only 4 years (and certified in special and general education) noted, “We didn’t learn very much about differentiated instruction in school, but we did take away some information.” The second item on the questionnaire asked participants to discuss whether what they learned in their teacher preparation programs about differentiated instruction was useful. Nearly all teachers responded positively to this question (94%). The third item on the questionnaire asked respondents if and how they applied differentiation in their practice. All of the survey respondents answered this question in the affirmative with the exception of one who commented, “Sometimes. I still find it hard to apply in my lessons without spending great amounts of time in preparation.” This notion of “time and preparation” was a major theme across multiple questions, and as such, it needs revisiting. The fourth item asked teachers to identify those students for whom differentiation is most useful. A majority of survey respondents noted that differentiated instruction is useful for all of their students, commenting for example, “I think that it benefits all students for different reasons! It challenges and engages all students according to their level and need!” About a third of the respondents stated they used differentiated strategies for students who did not fit the “norm” — i.e., those in special education, “challenged students”, or “high or low students” (sic). Finally, the last item focused on identifying the most difficult part of differentiating instruction. Eighty-eight percent of respondents identified time and/or planning as the most challenging obstacles to implementation. This also included time for preparing materials.

The gap between theory and practice

In terms of theory and the gap between theory and practice, several of the respondents (44%) replied that they felt well prepared in terms of the theoretical underpinnings associated with differentiated instruction. One survey respondent captured this by stating, “I learned that differentiated instruction is making sure my teaching reaches all students no matter what their level or ability. It is giving students the opportunity to learn at their level.” Another respondent identified the theory behind differentiated instruction stating that, “Differentiating is matching curriculum to learners. Grouping students according to levels and abilities. (It is) grouping heterogeneously and providing some choices.” Participants made specific comments regarding the gap between theory and practice as well. A quarter of survey respondents noted that while they received professional development and training regarding differentiation, it was not enough. One survey respondent articulated this sentiment by noting, “College did not prepare me enough for working. My work experience in a school... taught me what I know about differentiation.” Another participant commented that, “(My teacher preparation) gave me a lot of ideas about how to differentiate, (but it was) sometimes too much information to process. I think it is
important to have application activities as you go along.” A third respondent, with over 20 years of teaching experience, stated, “I find that what I was learning through training was limited. Theory was discussed, but practice and different techniques weren’t provided.” A fourth person summed it up by saying, “I felt very well prepared in theory in almost every way, but when it came to the actual practice of how to implement differentiated instruction I felt very much at a loss.” A teacher in a self-contained special education classroom echoed these comments by noting that:

(My graduate training) gave me ideas, but prior to being a teacher and just learning about it was more informational. Being in the classroom and actually teaching though (is what) taught me the most about teaching and how to be successful (through) trial and error.

Almost half the survey respondents commented that they received some information about differentiation in their pre-service coursework or through professional development workshops.

Tools and strategies

The second overarching theme identified during analysis was learning about tools and strategies useful to the implementation of differentiated instruction. Almost two-thirds of respondents commented on the strategies that they acquired during their undergraduate or graduate training, such as, “I learned how to tier learning and teach to different modalities.” The majority of these teachers spoke specifically of learning about the importance of taking into consideration multiple intelligence theory and use of multi-modal strategies. One newly certified kindergarten teacher summed up this theme by saying that she learned:

It is necessary to have effective instruction using multiple intelligences to direct (the flow of) instruction. Differentiation includes modifications and adaptations. Differentiation is the way that we teach so all students can learn in the way that works best for them.

One dually certified survey respondent working in a self-contained classroom identified particular strategies she acquired in her special education training. She stated that she learned about:

Scaffolding, UDL, multi-sensory approaches, selective grouping, buddy/group work, organizational strategies, knowing students, using data, previewing, knowing families. Almost everything I do (involves) multi-sensory approaches–games, visual aids, manipulatives, real-world experiences, multi-leveled activities, readings, books, choice boards and many, many other (things).

A kindergarten teacher working in an ICT classroom similarly noted:

We learned about (differentiating) content, process, product* and the use of technology to aid students with significant disabilities. I also learned about (multiple) intelligences. (In my classroom) we are creating different difficulty levels and activities to follow up.
main lessons, and also activities with different modalities. The special ed (sic) students need more kinesthetic and visual supports for learning. Introducing music and movement has been fun.

Another kindergarten teacher working in an inclusive classroom noted, “I vary delivery of instruction . . . (and) provide many ways for doing work, i.e., drawing pictures and labeling, using charts, video, and movement.”

Most survey respondents had a broad sense of strategies useful in differentiating instruction for children with diverse needs. They were also familiar with the jargon used in differentiation (e.g., engaging different modalities).

**Time and preparation**

The third and final theme emerging from the analysis was that of time and preparation. This was a major concern for most of the survey respondents (88%, as stated above) and resulted in various comments. One survey respondent noted that there were, “time constraints while teaching and in creating materials.” A large number of other survey respondents echoed this sentiment by referring to issues related to “personal time management for how to plan and prepare materials.” Another stated, “finding time to address all learning and behavioral issues (some of which include motivation)” as a challenge to differentiating instruction. A first grade dually certified teacher in an ICT classroom summarized the major issues by stating she had difficulty:

Finding the time to (1) create individualized materials; and, (2) finding the time to work with all of those students requiring differentiated instruction; and (3) convincing the child that needs or is getting something ‘special’ and wants the same (material as his/her peers) why they don’t have it.

A teacher in a multi-age classroom noted, “Time, patience, and creative thinking (are most difficult); however, that’s what makes a successful educator.”

While survey respondents appeared to have broad knowledge of both the tools and strategies useful in differentiating instruction, a significant majority noted that the constraints of time and demands of preparing materials prevented them from easily engaging in the use of differentiated strategies.

**Limitations**

This was a small exploratory study aimed at better understanding teachers’ perspectives and beliefs regarding their training and experiences in the use and implementation of differentiated instruction in the early childhood classroom. Due to the limited number of respondents, it is not appropriate to make broad statements regarding the data. It would be suitable to use this as a basis for further research regarding early childhood teacher preparation, possibly extending the questionnaire to significantly more early childhood teachers, and to explore how teachers currently differentiate instruction and assessment in their classrooms.

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When discussing the usefulness of learning about differentiated instruction in their undergraduate or graduate training programs, most respondents acknowledged that it was useful, but were quite vague about how so. It would be interesting to follow up on this since it could have specific application in terms of curriculum for pre-service preparation programs. Studies regarding the use and implementation of differentiated instruction in student-teaching practicum as well as in the classroom would be useful for the field.

**Implications**

Despite the broad range of experiences and years of teaching, responses from this study are similar for both recent and older graduates of teacher training programs. Findings indicate there is a large discrepancy between what teachers learn in pre-service training programs and actual implementation of differentiated strategies in the classroom. This gap between theory and practice speaks to the need for early childhood teacher education programs to ensure that students receive numerous experiences to apply theoretical coursework about differentiated instruction to their student teaching practice or other fieldwork. In other words, students need practice. They need to develop lesson plans and implement lessons that emphasize specific differentiations for children in the classrooms they serve. The more experience pre-service teacher candidates have with these strategies in real-world environments, the more confident and successful they will be in using these strategies in their own classrooms. It is not enough to rely on professional development workshops once a teacher is already in the field, since these generally do not allow for the in-depth kind of experiences and supports that pre-service training provides (i.e., full semester-long course paired with student-teaching practica). Coursework in differentiated instruction should go beyond theory and include opportunities for practice in lesson planning and other direct instruction as well as assessment of children’s learning. This would align well with new teacher certification requirements such as edTPA that focus on planning, instruction, and assessment (“edTPA,” SCALE, 2014).

Many of the survey respondents expressed their opinions about multiple intelligences and multi-modal instruction, and while these are useful concepts and strategies connected to differentiated instruction, they are not the only concepts and strategies of differentiated instruction. This seems to be a limiting misconception regarding differentiated instruction. Pre-service teacher education programs can work with student teachers to help them learn about and design differentiated strategies that go beyond these generic ideas. With practica and fieldwork, pre-service teachers will encounter real children in real classroom situations who are having difficulty accessing parts of the curriculum; they will need to make customized decisions in real time. The realities of working with children require candidates to go beyond useful but generic theories and implement differentiated instruction to meet the needs of all children in the classroom.

The respondents overwhelmingly identified time and preparation as an obstacle for the delivery of differentiated instruction. This suggests that they perceive differentiated instruction as an “add-on” to, or as “separate” from, their ongoing teaching responsibilities. Consequently, they are less likely to incorporate it into their daily practice. Thus, the implication for teacher preparation programs is to incorporate differentiated strategies throughout pre-service
coursework and practica. Students taught to view differentiated instruction as part of their on-going planning and practice are more likely to embed it in their future pedagogy.

While there is a rich literature on “how to” implement differentiated instruction, there is surprisingly little research on its actual implementation. The reasons for the gap between theory and practice discussed above need further exploration. Additional research in this area is necessary so that it can inform and shape pre-service teacher training programs. Identifying and understanding how and why teachers use their pre-service knowledge of differentiated instruction would be extremely important in guiding and shaping their pre-service preparation.

References


