The Misnomers of Differentiating Instruction in Large Classes

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Abstract

With increasing class sizes of diverse students, instructional options for those who teach large classes in higher education are limited. While whole-class instruction is an integral part of many classrooms and often the instructional practice of choice, this teacher-centered strategy is less effective in promoting a greater level of growth and academic success with college students. This study examined instructors' understanding of differentiated instruction and their perceptions of the challenges to implement differentiation in large classes. Themes emerging from this study highlight the misnomers of differentiated instruction, further solidifying the need for adequate training and professional development on differentiation. Although a glimpse into the perceptions of one campus' faculty, the results contribute to the conflicting discourse on differentiated instruction in higher education.

Keywords: Differentiated instruction, large classes, higher education, professional development.

Contemporary students not only come from diverse cultures, they have varied learning preferences. And to complicate matters even more, they also have different levels of emotional and social maturity along with a mixed breadth and depth of interests (Mulryan-Kyne, 2010; Tomlinson, 2001). The demographics of traditional age students are lower income, first generation, students of color, and immigrants who have not been served nor have achieved as well as their predecessors (Rhoades, 2012). They often deem traditional classroom activities as boring or routine and expect to be engaged by activities that produce excitement, anticipation, and engagement with other students and the course content (Phillips & Trainor, 2014; Robinson, 2013). With increased enrollments in higher education comes increased class sizes and the expectation for instructors to improve their pedagogy to deliver high levels of quality and subsequent value in the classroom. This is especially challenging in large classes; therefore, instructors need to identify effective strategies of instruction for large classes (Carpenter, 2006).

New instructors in higher education often begin teaching based on their experiences as students in the colleges or universities they attended. Many have never taken a course or

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studied pedagogical theories, thus resorting to long lectures and unrelated assignments (Mundy, Kupczynski, Ellis, & Salgado, 2012). It is likely that instructors learn to teach through experiences, observations, self-directed learning, mentoring, or attending workshops. Their efforts to improve their pedagogy are guided by their goals, knowledge, and practical experiences. Yet, instructors falling short with the knowledge needed to fully understand how to improve their teaching performance may hastily resort to using the unplanned "shotgun" approach (Murphy & Jensen, 2016). Instructors can become overwhelmed by the pressure to publish and resort to traditional teaching and assessment methods such as lecture and written exams (Mulryan-Kyne, 2010). Essentially, instructors need a framework for planning and delivering instruction so students are engaged and can make meaning of the content which is the bedrock of differentiated instruction.

Rooted in the one room schoolhouses common in the 1600s (Gundlach, 2012), differentiation is a philosophy, a set of principles about teaching and learning to which instructors proactively plan instruction to respond to student differences in readiness, interests, and learning profiles. Although it is an approach to instruction, the principles embrace a positive learning environment, quality curriculum, assessment that informs decisions, and flexible classroom management (Tomlinson & Imbeau, 2010). Carol Ann Tomlinson (2001), a leading authority on differentiation, points: "Differentiated instruction is not the "Individualized Instruction" of the 1970s" (p. 2). Since the terms have long been used interchangeably, the ongoing fusion of "differentiated instruction" and "individualized instruction" has contributed to the misunderstanding of differentiation (Tomlinson, 2001).

Albeit differentiated instruction is a promising approach for elevating student engagement and learning, these nuances of effective teaching in higher education are seldom taught (McCarty, Crow, Mims, Potthoff, & Harvey, 2016). For many students, differentiation may very well be the difference between academic success and failure (Dosch & Zidon, 2014). Given that effective differentiation requires more specific instructional strategies, instructors typically need adequate training and professional development in differentiated instructional methods. Yet, some instructors posit that the practicality of using differentiation, especially in large classes of students with a broad range of knowledge and interests, can be quite problematic.

Review of the Literature

Throughout life, students can choose to dress themselves from a variety of styles to match their preferences. Without explanation, we understand that this form of choice allows them to be more comfortable and to express their developing personalities. Similarly, modifying instruction for students with such diversity is more engaging and inviting (Tomlinson, 2001). As such, student diversity and background knowledge posit a critical need to differentiate instruction to ensure successful outcomes. Thus, recognizing the varied skills, cognitive development, and readiness levels of students is imperative when planning instructional techniques and strategies. This intentional approach creates an environment that embodies learner growth and success in contemporary college classrooms (Lightweis, 2013; Pham, 2012).

Differentiated Instruction

As described by Tomlinson and Imbeau (2010), differentiation is "classroom practice with a balanced emphasis on individual students and course content" (p.14). Tomlinson (2004) has offered four methods for teachers to differentiate their instruction: 1) content, 2) process, 3) product, and 4) learning environment. In short, content is the *what*, process is the *how*, product is the *evidence*, and the learning environment is students' *physical and psychological needs*. Further suggested by Tomlinson's model is that teachers not only promote equity and excellence through differentiating high quality content, process, and product but to also center instruction around students' readiness levels, interests, and learning profiles (Santangelo & Tomlinson, 2009).

Differentiated instruction is an alternative to the most common teaching methodology used in higher education, the lecture (McCarty et al., 2016). When instructors differentiate their instruction based upon students' interests, students are able to connect the content with things they already value. This interest based differentiation promotes engagement, facilitates motivation, and encourages students to recognize new interests (Santangelo & Tomlinson, 2009). Previous studies found that students generally favor differentiated instructional approaches and their achievement level is higher when compared to direct whole-class instruction (see Ernst & Ernst, 2005 and Joseph, Thomas, Simonette, & Ramsook, 2013).

Differentiated instruction is effective when it tenders expected changes in student achievement of knowledge, skills, and attitudes. The framework to maximize student learning includes the identification of students' background knowledge and modifications to instructional content, process, product, and assessment. Even further, collaboration and autonomy develops student interactions, communication skills, and independent learning (Pham, 2012). The option to either work collaboratively or independently increases student choice; thus, increased student engagement. Recommended strategies include graphic organizers, learning centers, independent study projects, tiered assignments, learning contracts, and web-based inquiry projects (McCarty et al., 2016).

Differentiation may not be the instructional practice of choice in higher education due to the amount of time it takes to craft a variety of materials and resources to match the needs of all students (Lightweis, 2013). When done effectively, differentiation requires a significant amount of time, effort, and dedication. Preparation for any college course requires significant planning; however, engaging differentiated content, processes, and products is even more laborious. Yet, through differentiation, students develop a deeper knowledge and understanding of content, especially when activities are based upon their readiness and interests (Santangelo & Tomlinson, 2009).

Professional Development

The role of teaching in higher education is a meta-profession to which faculty have content expertise in one or more areas of their academic discipline but may lack the experience and/or knowledge of how to teach the content as well as student learning (Murphy

& Jensen, 2016). The two generally accepted theoretical views about a quality teaching and learning experience are: a) knowing how students learn and b) approaches to teaching and learning. Thus, teaching centers have been created by many institutions to support professional development for instructors in providing quality teaching and learning experiences; however, it is unclear how effective these centers are at achieving these goals (Kanuka, 2010). Not only are teaching centers underutilized by faculty, there are limited incentives and sometimes even disincentives for faculty to seek their services within the reward structures (Rhoades, 2012).

Mundy et al. (2012) suggest that professional development should include a variety of general education courses such as English/Language Arts, Mathematics, Science, Social Studies, and Cross-Disciplinary subjects. Further, a generalized professional development program should contain assessments, best practices for teaching in higher education, student engagement for retention and success, student behavior management, and current research on the effective use of technology in education. Murphy and Jensen (2016) developed the Multidimensional Matrix of Teaching Development (MMTD) to assist instructors with planning and guiding self-directed improvements in a specific component of their teaching. The structured MMTD framework is comprised of five dimensions, each containing six sub-dimensions and components to target for improvement in best practices of teaching. The dimensions are: content knowledge/expertise, instructional design, instructional delivery, instructional assessment, and course management. Using the structured MMTD framework, faculty in all stages have the ability to use feedback from students, peers, and mentors in addition to self-reflection to guide improvements in their teaching practices.

Purpose of the Study

Although differentiation is common in K-12 education, differentiated instruction has yet to sustain the same momentum in higher education. This study sought to examine instructors' understanding of differentiated instruction and their perceptions of the challenges to implement differentiation in large classes. Based on the work of Santangelo and Tomlinson (2009), an online survey instrument, Instructor Perceptions of Differentiated Instruction (IPDI), was designed in order to address these topics.

Methodology

Survey

The IPDI survey questions contained seven multiple choice questions and two open-ended questions (see Appendix A). The recruitment email for the survey stated: We are interested in learning more about differentiated instruction for large classes in higher education. In short, how do instructors teaching large classes define differentiated instruction and what are their perceptions of the challenges to implement differentiated instruction in large classes? Self-reported demographic information included: gender; race; age; rank; number of years teaching in higher education; number of large classes taught, including online, hybrid, and face-to-face; and department or school teaching within the academic college.

Participants

The IPDI survey link was emailed to 108 instructors identified as teaching classes of 50 or more students within one academic college of a large research institution in southeastern United States. Of the 20 instructors (19%) responding to the survey, 13 identified as female and six identified as male ranging in age from 30 to 79 years. In terms of rank, five were instructors, five were assistant professors, six were associate professors, and four were full professors. Their number of years teaching in higher education ranged from one to more than 10 years with 50% having taught two or more large classes. Instructors represented a variety of departments within the College, the majority in Human Development (22%), Performing Arts (17%), Consumer Studies (11%), Communication (11%), English (11%), and Religion and Culture (11%). From the 9,898 potential undergraduate students attending the university, this profile represents exposure to 3,494 (35.3%) of those students.

Data Analysis and Results

First, the responses to the two open-ended questions were qualitatively examined to reveal any patterns in defining and understanding the principles of differentiated instruction. The first question asked: In your own words, please define "differentiated instruction/DI." The last question of the survey asked participants to share any other comments that they had about differentiated instruction in higher education. Of particular interest was the identification of any shared misconceptions about differentiated instruction amongst these instructors teaching in higher education.

While differentiated instruction has been defined in the literature from theoretical perspectives, practitioners in this study delineated their understanding of differentiated instruction as process (58.9%), product (17.7%), content (11.7%), and learning environment (11.7%). Table 1 shows an excerpt of how the responses were coded and categorized.

Other survey responses align with previous research (Kanuka, 2010; Wormeli, 2005) that the principles of differentiated instruction are both challenging to understand and difficult to put into practice, especially in large classes. Instructors emphasized these challenges as: (a) class size; (b) limited face time and resources; and (c) academic pressures to meet the requirements of a research focused university. Expressions of some of the challenges are represented in Table 2.

During the next phase of data analysis, the seven multiple-choice questions of the survey were quantitatively analyzed, focusing on the type of training received in differentiated instruction and the instructors' perceptions of utilizing differentiated instructional strategies in large classes. In terms of training, half of the instructors in this study had no training in differentiated instruction while the other half had read some literature or attended a workshop or conference presentation. When asked which factor makes differentiated instruction challenging to implement, instructors had the opportunity to select more than one response. Class size (87%), lack of instructional time (73%), and lack of resources

Table 1. Comments about differentiated instruction.

Theme	Percentage	Comments
Content: what	11.7%	preparing curriculum and outcomes based on individual student needs based on personal interests, culture, ability/disability, socio-economic status, sex, etc.
Process: how	58.9%	instruction appropriate for different kinds of learners a way to best reach/teach each student it is an approach to teaching that recognizes students have different ways of learning successfully providing instruction that best meets the learning style and modes of each student, it means that one strategy and one style does not work for all
Product: evidence	17.7%	the instructor provides varied methods to teach and assess student learning, which increases the opportunities for students to learn and excel in the class
Learning Environment: physical and psychological	11.7%	dividing students the ability to perceive and address individual students' misunderstanding or lack of understanding about current class topics, usually in one-on-one encounters before class, after class or during office hours providing customized learning experiences

(60%) ranked amongst the leading challenges while lack of training (27%) was seemingly insignificant.

When asked to rank the practicality of using differentiated instruction, nearly half (44%) of the instructors selected impractical but reasonable, 24% selected impractical and unreasonable, 19% selected practical and reasonable, and 13% selected practical but unreasonable. Ten (63%) considered the use of differentiated instruction as somewhat important while three (19%) viewed differentiation as not effective in higher education, two (13%) as extremely important, and one (6%) as a buzzword that will eventually fade.

Discussion

While the findings of this study are limited to the perspectives of one campus' faculty, they provide a focused look at instructors' understanding of differentiated instruction and their perceptions of the challenges to implement differentiation in large classes. Although the instructors in this study differed in terms of their perceptions, common themes were identified including: You Snooze You Lose, Toughen Up Buttercup, and Just Babble. These salient themes highlight the misnomers of differentiated instruction which

Table 2. Comments about challenges.

Theme	Comments
Class Size	large class sizes make this difficult differential instruction can work in small classrooms, it has no place in a large classroom at a research university; part of learning should be that you need to adapt to the environment and not expect the environment to adapt to you next to impossible in a class of 450 students there is no possible way of implementing this large scale; the larger the class, the LESS ability to differentiate
Limited Face Time and Resources	with limited resources and pressures to meet many other educational and performance goals, it is often very hard to fully offer what might be the best in meeting students' needs most of us don't even have graders so it's difficult to manage the ideal teaching strategies today we are teaching many more students with special learning needs and cultural/language issues that the challenge is [an] even greater issue
Academic Requirements	faculty are encouraged to do the things that make it easier for them, so they can focus on grants and research; they are not rewarded for putting extra into teaching

subsequently parallel some of the myths proposed by Wormeli (2005) and misunderstandings suggested by Tomlinson and Imbeau (2010).

You Snooze You Lose

As Chamberlin and Powers (2010) observe, some instructors in higher education embrace differentiated instruction, while most use the traditional lecture format. Instructors in this study (87%) preferred direct whole-class instruction such as teacher-led discussions and demonstrations as the instructional strategy of choice. Albeit differentiated instructional practices are beneficial, the progression past whole-class instruction creates apprehensions and challenges for instructors in higher education (Joseph et al., 2013; Kanuka, 2010) as quantified in this study as class size; limited face time and resources; and academic pressures to meet the requirements of a research focused university.

Given that all students will not be able to demonstrate mastery on the exact same day, instructors should teach so students learn, not for the purpose of documenting deficiencies (Wormeli, 2005). When instructors differentiate instruction, they shift from being

depositories of information to facilitators of learning opportunities. While content knowledge continues to be important, the focus is less on knowing all the answers and more on reading students in order to create pathways to learning (Tomlinson, 2001). This is especially critical when considering today's contemporary students. As Caruth (2016) described, "they are self-assured, accomplished, active, intelligent, and motivated" (p. 38). They need organization and feedback on their progress (Caruth), and find it difficult to focus in class when information is received passively (Phillips & Trainor, 2014; Robinson, 2013). Most students not only have a preference for active learning experiences, but active and collaborative instructional methods produce significant improvement in learning outcomes (Carpenter, 2006).

For some instructors in this study, the consensus was that students should adapt to the learning environment presented to them; the learning environment should not adapt to students. One instructor noted, "it is a pipe dream and may well open the door to legal challenges since DI does not treat all students the same and how is one to grade students using different scales for the same class and credit?" Another instructor commented, "there is no possible way of implementing this large scale; the larger the class, the LESS ability to differentiate."

Toughen up Buttercup

If instructors neglect to strategically differentiate, not all students will learn enough course material to succeed. Instructors commented, "there is a very fine line between what is the responsibility of the teacher for teaching methods and what is the responsibility of the students for accepting new methods of learning" and "part of learning should be that you need to adapt to the environment and not expect the environment to adapt to you." If students should "toughen up" in order to succeed in higher education, instructors should differentiate. After all, we are living in a differentiated world (Wormeli, 2005).

In other words, the things that we share in common is what makes us human. How we differ is what makes us individuals. Student similarities take center stage in a class with little or no differentiated instruction while student differences emerge as important elements in teaching and learning in a differentiated classroom (Tomlinson, 2001). In order to be able to provide students with an appropriate college education and to prepare them for successful futures, it is important to know who they are and to meet their needs and wants (Caruth, 2016; Phillips & Trainor, 2014). Through diverse forms of content delivery, instructors can remove barriers that students have with transferring what is presented into meaningful patterns in their own knowledge (Schreiner, Rothenberger, & Sholtz, 2013).

Just Babble

Instructors in this study held basic ideas of differentiation and somewhat utilized differentiated strategies in their large classes. Instructors claimed that they were not differentiating their instruction for diverse learners, but when pressed to define differentiation, some offered contrasting and even misinformed descriptions. For example, "what I do [in

class] would probably not be defined as that: I give every student a variety of avenues for learning … with the hope (and the experience) that each student will find several that work well." Here, a principle of differentiated instruction is described correctly, yet the instructor believed it was incorrect. Further, this example is a shared misunderstanding of differentiation in that it is something an instructor does or does not "do" to students (Tomlinson & Imbeau, 2010).

There was also a lack of knowledge about the research supporting differentiated instruction. For example, one instructor stated that differentiation is "a jargon term used to describe a theory of education that is not based on any actual empirical evidence." Although the principles of differentiated instruction are embedded within the text of scholarly research articles, the case could be made that the term may not necessarily be cited within the title nor explicitly within the text (see Carpenter, 2006; Hunt et al., 2016; Kanuka, 2010; Murphy & Jensen, 2016; Solis & Turner, 2016). Yet, another instructor summed, "differentiated instruction IS a buzzword for what good teachers have been doing."

Conclusion

For decades, there has been a concern for the lack of preparation of faculty in service and teaching (see Murphy & Jensen, 2016). Awareness and training are successful pathways to create instructional change (Dosch & Zidon, 2014). With diversity on the rise in higher education, the dominating teacher-centered model of lecture-style teaching poorly serves students (Dosch & Zidon, 2014; Ernst & Ernst, 2005). Faculty are the cornerstones to student success, not just as single entities in increasingly large classrooms, but as a cooperative engaged in a variety of departmental and institutional initiatives to improve student achievement (Rhoades, 2012). As such, there is a growing need for teacher development centers in higher education to enhance and support quality teaching and learning (Kanuka, 2010).

Instructors in this study lacked adequate training in differentiation. This lack of training explains the conflicting responses to define differentiated instruction and thusly, the misnomers of differentiation. In order to implement these strategies, instructors need specific training and professional development opportunities to improve practice. Facilitating the use of differentiated instruction will only be realized if instructors fully understand the principles, skillfully use a variety of the strategies, and tender endorsement of differentiation (Santangelo & Tomlinson, 2009). Thusly, it is important to abandon traditional teacher-led instructional strategies. Although differentiation is complex and no polished solutions are guaranteed (Tomlinson, 2001), differentiated instruction in higher education is achievable (Ernst & Ernst, 2005), even in large classes. Because students differ significantly, there are no right ways in teaching and learning strategies (Chamberlin & Powers, 2010; Pham, 2012; Santangelo & Tomlinson, 2009). At its best, teaching should converge learning principles with practical applications linking learning to real-world situations, a keystone for learners to learn, think, and grow together (Caruth, 2016; Pham, 2012). Emerging teaching strategies in higher education often include a compilation of face-to-face and online methods along with a campus-wide welcome to effective teaching practices. This aligns well with the definitions of differentiated instruction (Kanuka, 2010).

A key component in differentiated instruction is providing students with a variety of choices in both products and performances so they can best demonstrate what they know, what they understand, and what they can do (Lightweis, 2013). When offered choices about materials, activities, and assessments, students feel a sense of empowerment which enhances their interest in a course. Allowing student choice with assignments or flexibility with due dates empowers students (Joseph et al., 2013) and thereby increases their engagement (Dosch & Zidon, 2014). Examples of student choice includes: provide a list of several texts so each student can choose the one that is of interest to them, or offer students a menu of options for completing a related assignment (i.e. deliver an oral presentation, create a slideshow with text and images, or write a traditional essay). Another strategy the instructor can use to differentiate instruction is sharing a story that relates to the content or allowing students to share stories and allow student choice. Storytelling motivates students and allows them to develop a greater understanding of course content when the story is applicable to the course as well as their lives (Solis & Turner, 2016). Students often enjoy conversing and learning from one another, offering their opinions, and sharing their personal experiences (Schreiner, Rothenberger, & Sholtz, 2013).

Albeit differentiating instruction can be challenging, students are held accountable and are likely to achieve more. A my-way-or-no way instructional approach allows students to either sail or encourages them to drop the course (Wormeli, 2005); thus, a clear mismatch between instruction and meeting the academic needs of diverse students (Dosch & Zidon, 2014). Instructors who engage principles of differentiated instruction in the classroom understand that every student differs with respect to their learning styles and preferences. Consequently, this allows instructors to be receptive to each student's background, personality, and abilities (Anderson, 2007). Though the goal for each student is challenge and growth, instructors should define challenge and growth differently in response to the varied levels of students' interests and readiness (Tomlinson, 2001).

Differentiated instruction is not new to teaching and learning. Findings from this study contribute to the discourse on differentiated instruction by providing specific information about what instructors in higher education perceive to be differentiation. The ability to capture evidence of instructor's reasoning and/or misconceptions associated with the principles of differentiated instruction and the application of such strategies in large classes highlights the need for professional development opportunities which in turn will better serve our students and institutions.

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Appendix A: IPDI Survey

1. In your own words, please define "differentiated instruction/DI."

2. How would you describe your use of differentiated instruction?
    a. I use differentiated practices on a regular basis.
    b. I use differentiated practices sporadically.
    c. I do not use differentiated practices.

3. Which type of training in differentiated instruction have you received?
    a. Attended several workshops and/or conference presentations.
    b. Attended a workshop and/or conference presentation.
    c. Read some literature.
    d. None.

4. How often do you engage in direct whole-class instruction such as teacher-led lecture and/or demonstrations?
    a. Always (60% or more).
    b. Often (40% - 60%).
    c. Frequently (10% - 40%).
    d. Seldom (under 10%).

5. How would you describe your personal opinion about using differentiated instruction in higher education?
    a. Extremely important.
    b. Somewhat important.
    c. A buzzword that will fade.
    d. Not effective in higher education.

6. How would you describe the practicality of using differentiated instruction in higher education?
   a. Practical and reasonable.
   b. Practical but unreasonable.
   c. Impractical but reasonable.
   d. Impractical and unreasonable.

7. How would you describe the benefits of using differentiated instruction in higher education?
   a. Significant and worthy of the effort required to implement.
   b. Significant but not worthy of the effort required to implement.
   c. Insignificant but somewhat worthy of the effort required to implement.
   d. Insignificant and not worthy of the effort required to implement.

8. Which of the following makes differentiated instruction in higher education challenging to implement? (select more than one answer if applicable)
   a. Lack of training.
   b. Lack of resources.
   c. Lack of instructional time.
   d. Class size.
9. Please share any other comments that you have about differentiated instruction in higher education.