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Putting children and families first to ensure high academic achievement for all

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DIFFERENTIATED INSTRUCTION

AT A GLANCE

Differentiation in instruction means tailoring instruction to meet individual students' needs and is viewed as catering to different learning styles and needs, or different types of intelligences. At its most basic level, differentiation consists of the efforts of teachers to respond to variance among learners in the classroom. Whenever a teacher reaches to an individual or a small group to vary their teaching in order to create the best learning experience possible, that teacher is differentiating instruction. The quality of instruction depends on a number of things such as content, process, products, learning environment, use of ongoing assessment and flexible grouping. Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile: *Content* (i.e. what the student needs to learn or how the student will get access to the information), *Process* (i.e. activities in which the student engages in order to make sense of or master the content), *Products* (i.e. culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit), and *Learning environment* (i.e. the way the classroom works and feels).

Introduction

Differentiated Instruction (DI) is an approach to teaching and planning that can address the needs of diverse learners in an inclusive classroom. Implementing DI can be a daunting task for teachers because it requires a new way of thinking about curriculum and instruction. Classroom teachers report that meeting the needs of a wide range of students is one of their greatest challenges, especially because of a perceived lack of knowledge and skills about how to adapt curriculum materials and how to adjust learning strategies in efficient and effective ways during the flow of teaching and learning. Differentiated instruction entails providing students with multiple, flexible means of representation, expression, and options for engagement. Multimodal approaches have been shown to bring the learning experience to life and to enhance conceptual change (Jewitt, 2008; Kress, 2009) and children were found to be able to demonstrate their understanding of the content in multiple modes (Tippett, 2003). According to the differentiated

instructional approach, teachers respond to learners' readiness, interests, and/or learning profile. The term readiness refers to an individual's proficiency at a particular point in time with a specific set of knowledge, understanding, and skills that are necessary to be successful with a particular aspect of learning. Interest refers to the feelings and emotions that lead an individual to focus on something because that topic or pursuit is important to them. Student interest is a conduit to motivation, which can impact engagement and understanding. Teachers can use interest to link the curriculum to things that matter to students. Learning profile encompasses aspects of how individuals learn, how they process what they need to learn, or how they think about, remember, and use what they learned (Sousa & Tomlinson, 2011). Tobin and Tippett (2014) suggested the diagram below as teacher's response to student needs through three components (i.e. respectful tasks, flexible grouping and ongoing assessment and adjustment).

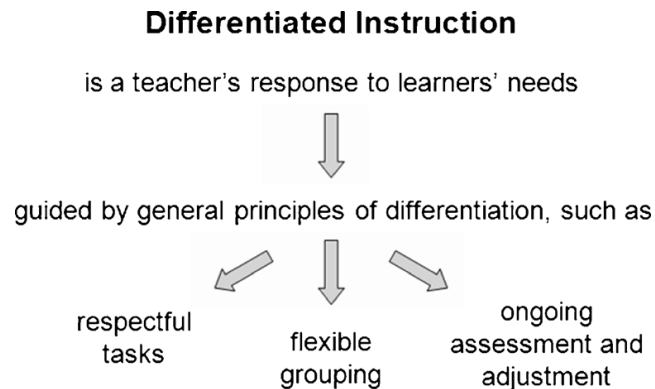


Figure 1: An overview of differentiated instruction (Adopted from: Tobin, & Tippett, 2014)

Respectful tasks take into consideration student readiness. Flexible grouping allows to group students so that they could get involved and use their best potential. Ongoing assessment and adjustment emphasize the importance of formative assessment and help students reach mastery of what they learn. While we are still trying to better understand how the differentiated instruction can best be approached, there is empirical evidence on its implementation.

Empirical Research on Differentiated Instruction

Marinescua, Tudora, Mujeaa, and Băisanb (2014) conducted an experimental study aiming to improve the motor quality strength in mentally disabled students through the use of differentiated instruction in the physical education classroom. The experimental and the control groups were assessed before and after treatment. The pre-assessment scores of students in experimental group were significantly lower. Four tests were used to assess student learning. The assessment results suggested that the average scores achieved by the experimental group for all four tests was significantly higher than the average scores of the control group on the same tests.

Karadag and Yasar (2010) conducted a study to determine the effects of the differentiated instruction approach on students' attitudes in Turkish course. The study was carried out as an action research with Grade 5 students in Turkey. The results of this study revealed that the differentiated instruction approach influenced the students' attitudes toward Turkish course positively.

Alavinia and Farhady (2012) conducted an experimental study with 60 Iranian intermediate female learners at Iran Language Institute (ILI) to investigate the possible differentiated instruction effects on vocabulary learning (in the light of learners' multiple intelligences and learning styles). Two 30-member groups were

formed as a treatment group or a control group. Both groups took a vocabulary achievement pre-test. Based on results of multiple intelligences and learning styles along with questionnaires that were also administered, the learners were divided into five separate categories termed visual-spatial, linguistic-auditory, kinesthetic-bodily, interpersonal, and intrapersonal. Next the learners in the experimental group were instructed based on their unique intelligence and learning styles types, whereas the other class was taught in the traditional way with no differentiation. The results of the study suggested that there was a significant amount of difference between the performances in the two groups on the post-test in favor of the experimental group. Further, the performance of different learners with various intelligences and learning styles was shown to vary significantly too.

Paredes (2017) conducted another experimental study in Ecuador to explore the effects of differentiated instruction in the increase of vocabulary, use of grammar and development of reading skills of English as Foreign Language (EFL) learners in 43 university students at Level 4 in English language. During the experiment double entry journal, reading charts and project menus considering learners' interests were used. The differentiated instruction was supported by multiple intelligences theory to allow students to perform to their full potential. The students' scores on standardized pre-tests and post-tests were compared to verify that learning in EFL occurred. The results of the study showed that after the application of different differentiated instruction strategies there was a significant improvement in students' learning of English.

Macon (2015) conducted a case study whose purpose was to examine the implementation of a one-day professional development session on differentiated instruction in a suburban middle school. In the study, *Differentiated Instructional Strategies for Student Motivation and Engagement* professional development program was used which presented multiple strategies to differentiate instruction in individual classrooms. This program claimed to increase engagement and motivation in the PK-12 classroom. The goal of the professional development program was to introduce teachers to a variety of strategies used to differentiate instruction and increase the number of times teachers solicit responses from middle school students in the classroom. Teachers were observed before and after the training. The findings of the study suggested teachers who used similar instructional approaches during pre-training observation did increase the number of times they solicited student responses. Teachers who incorporated student interest and student learning profiles in their lesson planning noticed more engagement from their students and more persistence in their thinking.

Wilson (2015) conducted a case study to examine the implementation of differentiated instruction by four kindergarten teachers to improve English Language learning in kindergarten students. The study utilized observations, interviews, and assessment data to identify and define instructional methods that are deemed effective as recognized by ELL students' learning results. Teachers used various resources and approaches to assist students to reach their fullest potential with curriculum standards. The results of the study suggested that differentiated instruction not only had an impact on English Language Learners (ELLs) in kindergarten, but it also had overall impact on the kindergarten students in classes in general. Additionally, teacher participants in the study stated that they had either coursework experience or engaged in professional learning in their schools on differentiated instruction. They believed that the coursework or professional learning helped prepare them for introducing differentiated instruction. However, it was also noted that two of the four teachers (50%) in the study did not have coursework or professional learning about how to educate diverse populations, such as ELLs.

Tobin and Trippett (2014) conducted a study with five generalist teachers of science from an urban elementary school in western Canada. All five teachers had students in grades 3 to 5 with a wide range of learning needs. Teachers were provided professional development about DI structured through workshop approach, with the goal of involving teachers in critical pedagogical discussions about science teaching.

Three half day workshops were scheduled to allow teachers time to implement planned lessons in their classrooms and to revisit, reflect, and refine their differentiated instructional practices during workshops. The participants' comments suggested that the DI approach provided a framework for their teaching, planning, and reflecting on practice, conveyed their growing understanding of DI and the possibilities that this understanding had for their teaching. Though the results of the study were limited by the small number of participants, the study suggested that teachers were likely to perceive both possibilities and potential barriers afforded by implementing DI in science. However, teachers also expressed the opinion that the possibilities outweighed the barriers.

Smeeton (2016) explored teacher perceptions about differentiated instruction, their common practices of differentiated instruction, and their sources of training for learning about differentiated instruction. The study sought responses to the following questions: *How did teachers perceive their own implementation of differentiated instruction in the classroom? What practices were common among educators when implementing differentiated instruction? What sources provided training to teachers about the use and implementation of differentiated instruction?* The results of the study strengthened the premise that differentiated instruction was perceived by teachers as a useful tool in the multidimensional classrooms, and that the use of differentiation in the three core areas of content-differentiation, process differentiation and product differentiation are integral to the success of the students.

Jenkins (2016) examined special education and general education teachers' use of differentiated instruction curriculum in a mixed-methods research. The qualitative data were collected from interviews and open ended questions. The quantitative data were collected from an online survey and observation form. The results of the study suggested that special education teachers had a common understanding of differentiated instruction support in the classrooms. They used a range of differentiated instruction materials that supported their students' reading progress. The general education teachers were split on their perceptions on how differentiated instruction impacted the learning outcomes of their students. The general education teachers were not provided with a scripted program and additional training. The difference between the two groups of teachers was the provision of the scripted program and additional training. This probably made general education teachers less confident in using differentiated instruction while teaching reading than special education teachers.

The challenges of using differentiated instruction were also addressed. As Nicolae (2014) noted, some challenges of differentiated instruction discussed in previous research related to limited preparation time, large class size, teachers' heavy workload, lack of resources, teachers' lack of skills in differentiation, and teachers' lack of motivation to differentiate.

Conclusion

There is empirical evidence that differentiated instruction allows teachers to create opportunities for students with differentiated learning needs to use their potential. There is evidence that instruction differentiated based on students' learning styles or multiple intelligences or some other differences can result in effective learning. While not all teachers seem to be prepared to offer differentiated instruction, there is also evidence that even short professional development initiatives can support teachers' understanding of how the approach can be used for maximum effect on learners.

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