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## WHAT IS THE EFFECT OF DIFFERENTIATED INSTRUCTION ON STUDENT ENGAGEMENT IN LEARNING?

Charlotte Lester  
*Kennesaw State University*

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WHAT IS THE EFFECT OF DIFFERENTIATED INSTRUCTION ON STUDENT  
ENGAGEMENT IN LEARNING?

by

Charlotte Lester

A Dissertation

Submitted in Partial Fulfilment of an ED.D. in Educational Leadership for Learning

Bagwell College of Education

Kennesaw State University

Kennesaw, Georgia

Dr. T. C. Chan, Dissertation Chair

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Effect of Differentiated Instruction on Student Engagement in Learning

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Charlotte Lester

2023

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ABSTRACT

WHAT IS THE EFFECT OF DIFFERENTIATED INSTRUCTION ON STUDENT  
ENGAGEMENT IN LEARNING?

The purpose of this research was to determine the effect of differentiated instruction on student engagement in learning. This mixed method study inspected the effectiveness of assigning different learning strategies to students according to their academic ability. One class received different assignments that addressed student's specific learning needs while the other class received common assignments. Attendance, achievement, and behavior data were also collected from this study to determine the overall effectiveness of differentiated instruction.

This study was conducted in a middle school located in Georgia. Both classes were regular education English Language Arts classes. One class was given differentiated instructions while the other class continued working on standard assignments. In addition to receiving differentiated assignments, the classes were observed, students were given a survey to complete, and teachers were interviewed. This study was conducted over an eight week period.

The findings of this study indicated that the students who received differentiated instruction made a significant gain in achievement. According to the data, the 2<sup>nd</sup> Period class (receiving differentiated instruction) outperformed the 3<sup>rd</sup> period class (receiving no differentiated instruction). In terms of class attendance and student learning behavior, there were not any notable differences in the findings.

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## **Chapter 1: Introduction**

A general educational class in today's era has many possible education variations (Levy, 2008). These variations are not only ethnic but are also related to different learning styles, different cultures, varying mental ability, and individual needs of all students (Artiles, 2015). The changes within the classroom also demand flexibility in the teaching styles (Goddard, Goddard, & Kim, 2015; Levy, 2008). This mixed methodology study will be conducted to analyze differentiated instruction as a teaching strategy and examine its impact on student engagement in learning. Currently, students in the researched district are not meeting the required threshold on standardized assessments (i-Ready Achievement Data, 2020). The school data report links it to lack of student engagement as a result of inappropriate instructional performance. This mixed methodology study will be conducted in a rural high school in Georgia to examine if differentiated instruction could increase student engagement in learning.

### **Statement of the Problem**

The problem in this research is that general education students at the research site are scoring below district average on standardized assessments (Burney Harris Lyons Middle School, 2021). The students are currently assessed at a 62% on the College and Career Readiness Performance Index (CCRPI), which determines if students are ready to be promoted to the next grade level (Burney Harris Lyons Middle School, 2021). Ruys, Defruyt, Rots and Aelterman (2013), and Adams and Pierce (2004) argue that given the broad range of the academic needs of students, it is extremely important for teachers to find appropriate ways of ensuring that all students within the same classroom are able to learn effectively. According to Levy (2008) and Adams and Pierce (2004), there has been a lot of pressure by school administrators on teachers when some students are not learning as they should, or some students are lagging behind their peers in the same classroom. It is the view of Levy (2008) and Ruys, Defruyt, Rots and

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Aelterman (2013) that it is very important to use differentiated approaches if there is any hope of helping all the students to achieve the set thresholds for promotion. At the very least, each classroom teacher is expected to help each student progress through school, from one grade to the next (Levy, 2008).

### **Purpose of the Study**

In general classrooms, teachers are searching for innovative ways to help all the students reach the academic level of their peers (Levy, 2008; Robb & Bucci, 2015). The purpose of this study is to determine how differentiated instruction, as an instructional strategy, could help improve student engagement in a reading classroom setting to ensure that no child is left behind during challenging learning tasks. This study may assist teachers in understanding differentiated instruction and the role it plays in the teaching and learning of reading.

### **Significance of the study**

Levy (2008) and Ruys, Defruyt, Rots and Aelterman (2013) argue that when students enter classrooms, they often come with very different personalities, styles of learning, and abilities. No two students in any given classroom are equal, due to their individual attributes, such as personality, learning style, or ability (Goddard et al., 2015; Levy, 2008). Yet, it is the responsibility of educators to ensure that all the students despite their differences get to achieve at a level expected by the school districts and the state. Levy (2008) argues that teachers are essentially hard pressed to ensure that they help all their students achieve their goals irrespective of these students' variations and differences. Teachers could vary their instructional strategies to suit the individual differences of students (Valiandes, 2015).

Differentiated instruction is deemed important because it allows for various approaches to be utilized to ensure all students achieve and meet the educational threshold set by their school district (Levy, 2008; Ruys, Defruyt, Rots & Aelterman, 2013). Given the students at the research

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site are not meeting the set assessment growth expectations set by the district, this study is significant because its findings will assist teachers in understanding how differentiated instruction could help improve student engagement in learning (Levy, 2008). In turn, the student engagement may help interpret learning and retain pertinent concepts that will assist students in becoming successful academicians (Ruys, Defruyt, Rots & Aelterman, 2013).

A review of current literature indicates that most of the available published articles or books relating to differentiated instruction involves discussions in highlighting the benefits of differentiated instruction. There are only a few empirical studies relating the differentiated approach to student achievement and student learning behavior. No study is found on the effect of differentiated instruction on student class attendance. Therefore, this study is initiated to fill this missing research link.

### **Problem Background**

Differentiated instructional strategies have evolved into an important practice in education due to the varied educational needs of students in the classroom (Brown, 2007). Differentiated instructional strategies refer to given methods of approaching a task or a problem, methods of operation towards the achievement of a particular end, and the planned models for manipulating and controlling certain information (Brown, 2007). Similarly, differentiated learning strategies have been described as the thoughts and actions employed by individuals when seeking to accomplish a learning objective (Brown, 2007). Instructional strategies are increasingly gaining popularity as teachers seek to tap into students' abilities and interests in order to help them absorb academic and career subjects that will increase their chances of success in colleges and careers (Brown, 2007).

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Teachers have increased the level of challenging assignments to keep students engaged by displaying creativity, research skills, and problem solving as they learn the necessary content. Another challenge to teachers is that students are increasingly disengaged in the daily instructions of the classroom learning experience (BHL Achievement Data, 2021). As a result, teachers are exploring the development of new instructional strategies for teaching students with diverse learning needs (Brown, 2007). Teachers are implementing standard-based instructional strategies to engage students in the lessons taught. Differentiated instruction as an instructional strategy is under serious consideration for implementation.

### **Theoretical Framework**

The works of four theorists, Jerome Kagan (1964a, 1964b), Robert Gagne (Gagne, 1970), and Gentry and Sanders, (2013) were selected to substantiate the study. These theorists report that learning styles both have genetic and environmental influences (Gagne, 1970; Gentry & Sanders, 2013). They support the theory that students learn differently and should be taught accordingly. Based on conditions of learning, Gagne (1970) and Gentry and Sanders (2013) suggested a variety of learning styles. The key reason for categorizing each learning style, according to its complexity, is to recognize what skills are needed by the students before they become engaged in the activity. Sequentially, the students will be able to grow academically with each model and apply that learning to the next model. In addition, the implication is that a dissimilar mode of teaching will take place with each style as with differentiated instruction.

Jerome Kagans' articles, *Developmental Styles of Reflection and Analysis*, and *Impulsive and Reflective Children* (1964a) accentuate variances in a student's intellectual mannerisms and how it affects their achievement. Kagan has maintained that students are typically an "impulsive" or a "reflective" learner, which means that either they thoughtlessly or

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contemplatively answer questions. He stated that students who thoughtlessly answer questions are concerned with being first to respond to the question as opposed to being correct. Reflective students, according to Kagan, are more prone to being cautious when responding, so that their answer is correct. Analytic and thematic styles are just as perpetual according to Kagan (1964a, 1964b). Analytic students are detail oriented when presented with a more multifaceted problem. Thematic students generally try to make sense of the whole problem instead of layering it.

The studies and findings of Gagne (1970), Gentry and Sanders, (2013), and Kagan (1964a, 1964b) support the fact that the individual needs of a student are met by providing tailored instruction that is characteristically centered on that particular student. Students have special needs or challenges that are met by providing individually designed instructions to fit their particular learning characteristics.

### **Research Questions**

The major research question of this study is:

What is the effect of differentiated instruction on student engagement in middle schools?

The research sub-questions are:

1. How are the teaching strategies and environment of a differentiated instruction class different from those of a traditional class?
2. What is the effect of differentiated instruction on student achievement?
3. What is the effect of differentiated instruction on student learning behavior?
4. What is the effect of differentiated instruction on student attendance?

### **Definition of Terms**

These terms in this study are defined as follows:

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***Differentiated instruction.*** Differentiation instruction is defined as tailored instruction that meets the individual needs of the student. This includes teachers using differentiated content, processes, products, or learning environments. It also includes the use of ongoing assessment and flexible grouping in order to assist with successful approaches to instruction (Ferrier, 2007). In this study, the teacher will use differentiated instruction in one reading class and will not use it in the other comparative reading class.

***Student engagement.*** Student engagement is described as the student's investment and feeling regarding the educational environment, teacher, and learning materials used to teach them, which extends to the level of motivation they have to learn and progress in their education. (Marzano, Pickering, & Heflebower, 2010). In this study, student engagement refers particularly to student achievement, student learning behavior, and student class attendance.

***Academic Assignment.*** Academic assignments assigned by the teacher may include essays, written assignments, and reports used to assess students' progress (Marzano, et al., 2010). Within this study academic assignment is defined as class assignments issued and graded by the class teacher.

***Student academic achievement*** is defined as how much academic attainment has been made by a student in one grading period or academic year (Marzano, et al., 2010). Within this study, student academic achievement is measured by the pre- and post-test reading scores at the 5<sup>th</sup> Grade level through teacher designed academic testing.

***Student Learning Behavior.*** The student learning behavior refers to student's stimulus driven response to what is occurring in the classroom or how the student behaves in this setting based on the activities around them. (Marzano, et al., 2010). For the purpose of this research, student learning behavior is defined as observable behavior or action displayed by the student.

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Student learning behavior is measured by using the class observation form created by researcher and the student survey developed by Ferrier (2007)

***Class Attendance.*** Class attendance is defined as the student's physical presence in class for the scheduled class time (Marzano, et al., 2010). For the purpose of this study, class attendance is measured by the number of days a student is physically present and absent from classes.

***Assessment.*** Within education, assessment is defined as a wide range of methodologies used by educators to evaluate, measure, and document the academic activities, readiness, academic growth, skill acquisition, or educational needs of students (Gardner, 1983). For the purpose of this study, assessment is the testing administered to students to determine their grade level or academic growth.

### **Summary**

The problem in this research is that general education students at the research site are scoring below the district average on standardized assessments (Burney Harris Lyons Middle School Achievement Data, 2021). The purpose of this study is to determine how differentiated instruction could help improve student engagement in learning. The findings in this study will assist teachers in their instructional process to get students engaged in learning and will also help enrich the scarcity of empirical studies in this field.



## **Chapter 2: Literature Review**

### **Introduction**

This study was designed to investigate the effect of differentiated instruction on student engagement among elementary 6th grade students of two reading classes. This literature review is focused on text pertinent to this study in the following categories: a) The meaning of differentiated instruction and its critical application to the educational realm; b) The effect of teacher perception and characteristics in differentiation instruction; c) interpretation of student engagement; d) differentiated instruction and student academic achievement ; e) differentiated instruction and student learning behavior; f) differentiated instruction and student attendance.

Teachers, as the central pillar of differentiated learning, need to take advantage of classroom elements to fit in the learners' interests, students' readiness to learn as well as the student's profile to engage in the learning process (Hall, 2002). How well teachers implement the differentiated learning model and how it impacts student engagement of learning are the focal points of this literature review.

### **Differentiation: Meaning, Importance, and Application**

The use of differentiation has emerged as one of the most common and popular approaches used and being advocated for use in helping students of diverse needs and educational requirements to achieve their educational goals (Hall, 2002). One of the subjects that have received significant attention is the meaning of differentiation. Instructional differentiation is defined in slightly different ways. To this end, the definition of differentiation adopted by Rock, Gregg, Ellis, and Gable (2008) has been the most widely used and the most appropriate for this study. Rock, et al., (2008) state that differentiation is the process of ensuring what students

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learn, how they learn it, and how they demonstrate what was learned is a match for the students' readiness level, interests, and preferred mode of learning.

Differentiated instruction is concomitant with specific teaching strategies and learning environments. Pozas and Schneider (2019) have proposed a taxonomy of differentiated instruction. They suggest that tiered assessments using multifarious resources and tasks adapted to student challenge level are a characteristic of differentiated instruction. Pozas et al. (2020) and Smit and Humpert (2012) similarly identify tiered assessments as a notable differentiated instruction practice among teachers. In such classes, diversity is addressed by teachers using various pedagogies (King-Sears, 1997) and strategies such as educating students and their parents about differences (Kronberg & York-Barr, 1998). Adapting standardized tests to account for diversity (Aliakbari & Khales, 2014; Tomlinson, 1995) and designing curricula on the basis of specific concepts, principles and understandings (Kronberg & York-Barr, 1998; Tomlinson, 1999) are also common teaching strategies linked with differentiated instruction.

In classrooms based on differentiated instruction, some teachers adopt heterogeneous groupings so that students can learn and socialize with peers with different characteristics and learning styles (King-Sears, 1997), thus promoting the appreciation of diversity. Other teachers may directly respond to student differences by, for example, acknowledging students' intellectual capacities and tailoring course content in line with these (Chamberlin & Powers, 2010). Alternatively, teachers may collaborate with students and, in doing so, place students' experiences and backgrounds at the center of such collaborations to meet the diverse needs of students (Tatum, 2011).

Watts-Taffe et al. (2012) and Tomlinson (2004) indicate that providing students with learning options is a classic feature of differentiated instruction classes that teachers use to

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encourage students to learn based on their intellectual capabilities. Through this strategy, teachers consider student differences in learning styles and intelligence. According to Tomlinson (2004), giving students learning options has high efficacy and positive outcomes since students learn independently. Furthermore, since students are presented with learning options in accordance with their learning styles, their learning and psychological needs are addressed by teachers. Tomlinson (2004) suggests that teachers in differentiated instruction classrooms use this instructional strategy to promote excellence and equity; positive student outcomes are achieved because consideration is given to students' individualized learning needs and knowledge levels (Dosch & Zidon, 2014; Santangelo & Tomlinson, 2009).

That providing students with learning options is a classic feature of differentiated instruction has also been confirmed by Pozas and Schneider (2019), who suggest that the instructional strategy helps students assume responsibility for their learning, empowering them to choose what and how they want to learn. Scholars such as Chamberlain and Powers (2010) propose that providing students with learning options as part of differentiated instruction promotes the individualization of lessons which effectively addresses variances in students' learning preferences. Consequently, teacher instruction is adjusted from the onset and not only when the lessons do not address the requirements of some students (Chamberlain & Powers, 2010).

Another common instructional strategy in differentiated instruction classes is the use of problem-solving activities (Bikic et al., 2016). Instructional strategies in differentiated instruction classes are not homogenous. For example, some teachers may use a blended, whole-class approach to balance the advantages and disadvantages of traditional teaching (Tulbure, 2011; Wormeli, 2005). Teachers who adopt a whole-class approach argue that some students

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learn more effectively in this environment; however, some teachers prefer to organize classes in small groups (Wormeli, 2005). For example, a study by Connor et al. (2011) showed that students exhibit greater academic achievements when organized into small learning groups. In this study, small learning groups produced higher academic achievement than whole-class instruction.

Similarly, in a study by Adami (2004), small groups were conceptualized as more effective for enhancing academic achievement because they are flexible and take into account students' interests and learning profiles. Consequently, the use of small groups is promoted by many teachers that use differentiated instruction in their classrooms. However, as a caveat, teachers do not depend only on one pedagogy in many differentiated instruction classrooms. The overarching aim of differentiated instruction is to apply instructional strategies aligned with students' needs and skill profiles (Connor et al., 2011).

Differentiated instruction is also concomitant with specific learning environments. Learning environments include designing nurturing classrooms to minimize anxiety among students (Powell, 2000; Tomlinson et al., 1997). Powell (2000) also found that a nurturing environment is efficacious for engaging the wide learning experiences of students, enhancing the learning experience in terms of quality, depth and substance. Tomlinson & Allan (2000) have identified environments within which students can express their humor, access guided help, and benefit from active teacher responses as a characteristic of a differentiated learning environment. Another characteristic of differentiated instruction classrooms is the use of working spaces where students perform individualized work based on their learning needs and experiences (Gentry et al., 2013). Working stations typically go hand in hand with the use of individualized learning materials and tiered activities whereby teachers maintain the same skills and concepts for all

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students but provide them with different resources according to their abilities (Chapman & King, 2005). Purposively composed student groups, using learning centers, compacting, conferencing, and complex instruction (Gentry et al., 2013; Hillier, 2011) also constitute common features of the learning environment in differentiated instruction classrooms.

The importance of differentiation has been emphasized by scholars such as Willis (2007) who explains the link between differentiated instruction and the various brain functions of the learner. It is his view that differentiated learning is not just rooted in but also supported by brain-based research. For him, instruction of students in several learning pathways as opposed to just one pathway ensures that there is creation of more pathways of access. This achievement is through several sensory organs including the nose (smell), eye (sight), and ear (sound) as well as through creation of connections that are cross-cultural. Willis (2007) also believes that whenever the multiple regions of the brain are enabled to store data on a given subject, more cross-referencing and interconnection of data derived from different sources can be done. These data, he concludes, are usually saved in many areas of storage and the cross-referencing is therefore a response to just one cue. The implication of this is that rather than a student just memorizing lessons or instruction, he/she actually learns it (Willis, 2007). The arguments by Willis (2007) present no empirical studies that justify his arguments. It might not be as successful as he claimed after all. Moreover, learning rather than memorizing instruction should be the goal of any form of teaching (Huijser, Kimmins & Galligan, 2008). However, it has also been shown in other studies that memorization is one of the most effective ways through which learning occurs (Rock, Gregg, Ellis, & Gable, 2008).

The arguments of Willis (2007) on learning are supported by Wolfe (2001) who argues that acquisition of all forms of data or information is via the five senses of a person namely the

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sight, smell, touch, sound, and taste. Willis (2007) adds that when information has been acquired through these five senses or any one of them, it is temporarily stored for future use. It is up to the brain to make decisions regarding how – if at all – to use the stored information (Wolfe, 2001). He argues further that the stored data have more impact on the brain when the stimuli are activated more frequently. The information known is of great importance to differentiation of instruction as an approach to teaching. This is because differentiation is able to activate not just one but multiple senses at the same time (simultaneously). This ensures that the brain is impacted more frequently to enhance learning (Wolfe, 2001).

The arguments by Wolfe (2001) differ from that of Willis (2007) in that they attempt to make some clearer and more explicit links or relationships between differentiation and brain functions. If indeed differentiation can be proven to activate multiple senses, then it can be true that it has the potential of causing data to have more impact on the brain (Wolfe, 2001). However, the problem still remains that there has been no sufficient empirical data or evidence to prove this assertion. Furthermore, more data that the brain processes may not always translate into better learning as has been argued above (McTighe & Brown, 2005). Therefore, while it is believed that differentiation of instruction has been successful in ensuring that no student is left behind in accordance with or in keeping with the requirements of the No Child Left Behind Act, there is still no clarity regarding how differentiation leads to enhanced learning at least on the basis of available empirical evidence (Klein, 2015; Wolfe, 2001).

The argument by Wolfe (2001) is also supported by Gardner's theory of multiple intelligence (1983). This theory posits that there are eight different types of intelligences, which together serve a very important role in helping to understand how students are able to learn using different kinds of minds (Gardner, 1983). These multiple intelligences also help enhance the

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understanding of how students are able to perform, remember, understand, and learn in different ways (Gardner, 1983). The intelligences are naturalist, intrapersonal, interpersonal, spatial, bodily-kinesthetic, musical, mathematical, logical, and linguistic. It is the strong view of Gardner (1983) that if teachers are able to teach in different ways and if learning could be undertaken and assessed using different means, then students would be served better.

Gardner (1983) asserts that as long as there is only one way or approach to instruction used in schools, the students forego essential learning and retention and such an approach does not make them to effectively maximize their capabilities. By arguing that assessment should be done through multiple means, he challenges the view that all students must be assessed using a uniform and standard formula (Gardner, 1983). Gardner believes that when such a homogeneous or single-method approach to teaching and assessment of students is applied, the inevitable result – though not always expected – is that the ability of students to retain the content they are taught is significantly lowered (Gardner, 1983). The opposite is true; students can significantly experience improved content retention when a differentiated approach to instruction and assessment is used (Gardner, 1983).

Gardner's (1983) arguments are mostly valid in light of available research. The multiple intelligences theory – as long as it is applied and explained clearly – can indeed be sufficient justification for the use of differentiation. A major issue with differentiation has remained that there is a lack of empirical evidence to demonstrate that its use enhances learning (Hall, 2002). Through the theory of multiple intelligences, at least some efforts are made to illustrate how multiple ways of teaching and multiple methods of assessment could enhance learning outcomes by increasing content retention.

### **Teacher Factors and Characteristics in Differentiation Instruction**

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According to VanTassel and Stambaugh (2005), the teacher is the main reason that the differentiation strategy has largely been unsuccessful in schools. Some of the teacher characteristics that hinder differentiation include a) teachers lacking the knowledge that is necessary to modify and differentiate the regular curriculum content areas in order to cater for the gifted students; b) teachers lacking classroom management skills required to support differentiation instruction; c) teachers lacking the beliefs required in implementing differentiated instruction, for example, understanding that students differ in the way they learn and that students are capable of acquiring knowledge that may not be within the teacher's domain of knowledge; d) teachers lacking the know how to accommodate approaches to learning by talented students coming from different cultural groups (both social and ethnic) or even those who are underachievers; e) teachers finding it difficult to locate and effectively utilize various resources that would help in teaching the gifted students; f) teachers lacking the planning time needed to adjust the curriculum for talented and gifted students; g) teachers lacking the support of school leadership to guide and value the implementation of differentiated instruction for gifted students; h) teachers lacking the relevant pedagogical teaching skills and knowledge for gifted learners (VanTassel & Stambaugh, 2005).

Apart from the above, other factors include lack of the relevant professional knowledge in schools as per Munro (2011) and Munro (2012). This professional knowledge includes teachers' knowledge of either gifted learning or associated pedagogy and the necessary curriculum; and leadership knowledge in regard to ways of providing leadership towards the effective provision of education to the gifted learners. The impact of insufficient professional knowledge in the provision of gifted education may be minimized to a certain extent if teachers employ familiar curriculum pathways and tools designed to identify students' content knowledge



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at any given point and then planning for their teaching (Munro, 2011). Accordingly, it is more effective for teachers to: a) identify more cognitively the complex knowledge and understanding within the broad topic areas which the teacher is more familiar with and to generate challenges and enquiry that will stimulate student's knowledge; here the teacher will require focusing on only a single topic at a time; b) examine gifted learning and thinking by identifying students who are able to learn topics at higher, sophisticated and more complex level on the knowledge plane. c) generate challenges as well as enquiries that will stimulate and students' knowledge; teachers only need to take account of a single topic at any given time; d) identify gifted learning and thinking; it is obvious that some students are able to learn and understand topics at a relatively higher, sophisticated and more complex level on the knowledge scale (Munro, 2011).

### **Student Engagement and Differentiated Instruction**

Engagement has been an intricate part of the learning process throughout the centuries (Marks, 2000). It has been correlated with academic success. Although student engagement is a method that is talked about quite often among educators, there are several broad terms in research that try to explain what it is and how it is effective in the classroom. Marks (2000) describes engagement as being actively engaged in the learning process. To expound more, she also notes that environment, community, instruction and other key elements play a very important role. It is also stated that engagement is three-dimensional: behavioral, emotional, and cognitive (Marks, 2000). Engagement may also vary from semester to semester depending on what is happening in a student's home life or whether a safe learning environment is provided.

As defined by Marzano et al., (2010), student participation encompasses being academically active on a short- and long-term basis. Engagement is more than a leisure activity that takes place occasional. It is a routine that should be second nature to students. When the

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following questions are being answered, then engagement is occurring: “How do I feel?” “Am I interested?” “Is this important?” “Can I do this?” (Marzano et al., 2010).

In education, student engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education (Marzano, et al., 2010). Generally speaking, the concept of “student engagement” is predicated on the belief that learning improves when students are engaged, and that learning tends to suffer when students are disengaged (Marzano, et al., 2010). Stronger student engagement or improved student engagement are common instructional objectives expressed by educator (Marzano, et al., 2010).

The Glossary of Education Reform (2016) defines education as a process of obtaining systematic academic instruction in a school or university. During this engagement process, the motivation level of the students heightens their curiosity which makes the students more interested in learning (The Glossary of Education Reform, 2016). As stated, students are allowed to define engagement and how lessons could be designed to keep them engaged and help the students learn. This is the ideal situation for securing the academic needs of the students and keeping them engaged (The Glossary of Education Reform, 2016).

### **Student Behavioral Engagement**

Student participation and behavior in an academic environment is the underpinning of student engagement (Harris, 2008). Student engagement, specifically on a secondary level, is concerning relationships with both instructors and peers that foster academic success and congeniality (Harris, 2008). Academic involvement, and constructive, useful conduct best define behavioral engagement (Finn & Voelkl, 1993). Behavioral engagement best defines how much a student will learn. The more involved they become, the more they will acquire (Finn & Voelkl,

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1993). One of the strongest predictors of school achievement is student behavior (Connell, Spencer, & Aber, 1994). Behavior unambiguously affects achievement because it can be measured daily: attendance, homework completion, behavior referrals (Connell, Spencer, & Aber, 1994). The more positive the behavior, the better outcomes you will see; not only in academics, but extra-curricular activities as well (Connell, et al., 1994).

Constructive performance, achievement, engagement in the academic progression, and attendance are all included in the behavioral engagement process. These behaviors can determine the level of achievement within a school year (Finn & Voelkl, 1993). According to research, the more students are engaged and attentive, the higher the academic outcome and a less than engaging, negative relationship between the instructor, students and peers raise less than favorable academic outcomes (Christenson, Hurley, Lehr, & Sinclair, 2000). Additionally, there is a direct relationship between student achievement and behavior (Finn & Voelkl, 1993). Some of the characteristics of behavior engagement include observed behaviors such as student learning behavior, academic growth, and attendance (Klem & Connell, 2004).

### **Differentiated Instruction and Student Academic Achievement**

Classrooms must be designed to serve as incubators for student learning source. In order to achieve this, educators have determined that differentiated learning is necessary in order to meet the learning needs of each student (Tomlinson, 2015). As such, teachers need to become diversified in their instructional methods and ensure they are proficient in meeting the needs of their students (Tomlinson, 2015). Since students often become disengaged during the learning process, it is imperative for teachers to utilize differentiated instruction to appeal to their unique learning style to re-engage them (Flaherty & Hackler, 2010; Morgan, 2014). Tailoring educational instructions to meet the needs of every learner plays a critical role in shaping the

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academic development of the learners (Ferrier, 2007). Differentiation in the issuance of learning instructions enable the learners to relate with the learning activities as the teachers use examples and forms of instructional materials that are consistent with the needs of the learners (Ferrier, 2007). The provision of similar teaching materials that consider the uniqueness and the strengths of every learner helps all learners acquire the same learning objective (Washington, 2018). Consequently, the learners will be able to use their strengths in addressing and responding to different academic needs, and this enables them to register better academic performance.

Differentiated instruction has been proven as an effective tool for teachers and students within the classroom (Little, McCoach, & Reis, 2014). Conversely, Reis, McCoach, Little, Muller and Kaniskan (2011) concluded in their quantitative study regarding reading enrichment that differentiated instruction has proved to be just as successful as traditional approaches. Goddard, Goddard, and Kim (2015) also concluded differentiated learning was effective in their study regarding math and reading. Little et al. (2014) concluded during their study, that out of the control and non-control group, the control group outperformed the non-controlled group with reading proficiency. Teachers play an instrumental role in ensuring the academic success of students in differentiated learning (Charles & Laurd, 2018). As teachers are preparing their academic lessons to engage the students, they must be mindful that the ability of learners in the classroom are varied (Charles & Laurd, 2018). The differentiation of the instructions to suit the individual needs of every learner allows the students with different concentration spans to focus on learning options that work for them if such possibilities are ethical and lead them towards the realization of a collective learning objective (Joseph, Thomas, Simonette, & Ramscook, 2013). Through this, every learner will be able to complete every assignment or sit on examinations and use their strengths to accomplish such tasks, and this will improve their academic performance.

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Additionally, differentiation of teaching instruction such as the use of different teaching mediums allows learners with different weaknesses and strengths to engage in and perform similar learning activities via multiple mediums (Simmons, 2015). For instance, the use of summaries, narration, storytelling, and illustrations, and algebraic presentations along with other mediums, enable students to actively answer the questions and respond to various lessons offered in the classrooms (Bal, 2016). The literature suggests that the differentiation of teaching instructions improved the academic performance of learners. The same is true when it comes to differentiated instruction and diversity. Lanier and Glasson (2014) concluded in their study that differentiated instruction is also effective in teaching students who are culturally diversified.

In Simmons (2015) qualitative study with seven participants, the effectiveness of differentiated instruction was examined in reading with one teacher using differentiated instruction and another teacher participating blindly. Through a series of reading strategies with students, Simmons (2015) concluded that differentiated instruction is effective in teaching reading strategies with elementary students. This study also highlighted that the students who participated in the study grew academically and showed interest in the subject matter. Similarly, research by Cusumano and Mueller (2007), which focused on differentiated instruction in an elementary school, established increases in the school's API scores as a result of differentiated instruction.

Boges' (2015) mixed method quasi experimental study explored the effects of differentiated instruction on achievement scores. Boges' pre and posttest design was tested with a small group and a whole group. Boges' study concluded that there was no difference in using differentiated instruction between the two groups. There was an increase in the mean score from

the pretest to the posttest, which was contributed to individual differences and not instructional differences.

In another study by Chamberlin and Powers (2010), differentiated instruction was linked to increased students' motivation, self-worth, study habits and engagement, which led to increased achievement. Similar findings have been established by Reis et al. (2011), Tulbure(2011), and Valiandes (2015). Valiandes (2015) showed that students that benefited from differentiated classrooms performed better than their cohorts in traditional classrooms.

In contrast to the research which suggests that differentiated instruction enhances students' academic achievement, some segments of the literature show antithetical findings. Boges (2015) did not find that differentiated teaching methods influenced students' academic achievement. Similarly, in a randomized multi-site cluster study, Little et al. (2014) did not find significant differences in comprehension when pre-test and post-test data were compared for the experimental and control group. Another study by Aliakbari et al. (2014) compared the impact of differentiated instruction and traditional approach on reading comprehension with differentiated instruction focusing on flexible grouping and tiered assignments. The scholars did not find a statistically significant difference between the two groups at the advanced level, although differentiated instruction successfully enhanced students' reading comprehension at the elementary and intermediate levels.

### **Differentiated Instruction and Student Learning Behavior**

The use of differentiated instruction in classrooms shapes the behavior patterns of students while in class and influences their academic development (Gentry, Sallie, & Sanders, 2013). Differentiation of instruction allows teachers to use various teaching materials and methods that encourage active participation of every learner regardless of their abilities and

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weaknesses (Ramos, 2018). For instance, the teacher can use reading exercises to encourage participation among the learners who have strong reading capabilities while teaching those who are good with figures and numbers by using different tools (Gentry et al., 2013). As a result, every learner should be confident in their abilities. It is a concept that will permit them to express themselves comfortably throughout the class session.

Mims' (2017) empirical study outlined a controlled qualitative study where differentiated instruction in reading was utilized between two elementary school classes. Mims utilized differentiated instruction on one class and not in the other. Mims (2017) concluded that both teachers and students benefited from differentiated instruction. In addition to students seeing their grades improved, teachers were rewarded with students who behaved and engrossed in the reading lessons taught in class. Mims went on to state that the more students enjoy reading in class the more they are prone to read. This was due to the differentiated instruction used with students to get them engaged in the reading, which assisted in the academic growth. The study of Muller, Hofmann, Begert and Cillessen (2018) examined students in grades 7-9 and concluded that when teachers engaged students in learning, student behaviors in classroom were less disruptive. Conversely, Wesley (2017) stated in his study of high school and middle school students that differentiated instruction had no bearing on student behavior in the classroom. Wesley stated that other variables were linked to student behavior, which included age, classroom size, gender, education, and their exposure to differentiated instruction methods.

Differentiation encourages teamwork among learners (Robb & Bucci, 2015). This component is vital in improving their social development (Robb & Bucci, 2015). In many cases, the teachers can place the learners with similar abilities and skillsets in groups and assign them to work or instruct those using concepts that encourage their learning experience (Aliakbari &

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Haghighi, 2014). The coming together of learners with similar strengths enable them to work together on various academic projects and tasks, which instill the teamwork skills among them.

Using individualized teaching methods and materials in classrooms gives every student an equal opportunity of expressing themselves (Subban & Round, 2015). Sometimes, learners who are perceived as weak in certain subjects often tend to shy away from participating in activities during lessons for fear of being wrong or laughed at by their colleagues (Van Geel, et al., 2019). However, with a teaching approach that uses models and techniques that optimize the strengths of each learner, every student will be encouraged to take part in various learning activities within the class environment (Rachmawati, Nu'man, Widiastara, & Wibisono, 2016). Through continued participation in the classroom activities, each learner will become confident in their abilities, and this will help in boosting their self-esteem. Santisteban (2014) and Malacapay (2019) suggest that using individualized teaching methods and materials supports students to become more metacognitive and self-directed since they gain a more nuanced understanding of their learning needs. Since differentiated instruction involves teachers constantly monitoring students' instructional needs, readiness and interests, students become engaged in the learning process, which means that they play a role in developing their personal goals. Santisteban (2014) argues that students become empowered as learners.

A study by Aranda and Zamora (2016) showed that differentiated instruction encourages students to exercise self-discipline because of the safe nature of the classroom environment, which encourages such behaviors. This finding has been confirmed by Santisteban (2014), who, in the context of a literacy class, established that differentiated instruction resulted in the use of self-discipline among students in addition to student participation. Similarly, Tieso's (2005) research confirms that differentiated instruction facilitates students to become confident,



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competent and self-sufficient because they must work in small groups. Small groups in such classes mean that teachers can identify students' preferred learning styles, which support students to work more efficiently. These findings have been corroborated by Gibson (2008), who finds that students work more effectively in small groups because of the opportunities for participation, increased engagement and receiving constructive feedback, which shape their learning behaviors.

### **Differentiated Instruction and Student Attendance**

Absenteeism in classrooms is attributable to many factors such as the rigid teaching approach used by the teachers and lack of interest in the lessons (Kearney & Graczyk, 2014). The use of differentiated instruction makes it easy for the teachers to employ flexible teaching models, which accommodate the needs of every learner, and this can help in changing different elements, which contribute to reducing the rate of absenteeism in school (Nagro, Hooks, Fraser, & Cornelius, 2018).

Using differentiated learning instruction that focus on the individual strengths of every learner gives them a sense of belonging, and they will find the learning process entertaining (Mok, 2014). As a result, they will always want to be part of every lesson, and this improves their attendance rate (Mok, 2014). In addition, differentiated instructions enhance the relationship between the teachers and the learners as the teachers will always have an opportunity of understanding the concerns of every learner (Heacox, 2012). Understanding the concerns of each student will help them detect any sign of absenteeism on time, and put strategies in place, which will curb such behaviors.

The teachers can utilize different creative and individualized teaching strategies that capture the interest of every learner and reduces boredom in the classroom (Turner, Solis, &

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Kincade, 2017). Consequently, the students get attracted to the lessons (Turner et al., 2017). Additionally, assigning the students tasks, which align with their strengths, will prompt them to want to know more about the subject, and they will ensure that they attend every lesson, and this helps in curbing the rate of absenteeism. Similar findings have been established by Manship et al. (2016) in their study of a Chicago school which established reduced rates of absenteeism following the implementation of a differentiated program. Also, studies by Santangelo and Tomlinson (2009) and McQuarrie and McRae (2010) indicate that differentiated instruction is positively correlated with reduced absenteeism rates. Santangelo and Tomlinson's (2009) study shows that differentiated instruction promotes high student engagement, which causes students to be attracted to lessons and therefore improves attendance. McQuarrie and McRae (2010) similarly found that differentiated instruction encouraged students to advocate for their learning. In doing so, they better understood curricular expectations and how to improve their learning. A consequence is that students develop better interpersonal relations with their teachers. Schools are then made more attractive leading to increased attendance rates.

### **Summary**

The diverse research and descriptions of differentiated instruction and engagement in this review show that there is a positive relationship between encouraging students to become active in the learning process and ensuring that teachers are reaching each student in order for them to be successful. Differentiated instruction is a sophisticated approach that could enhance student engagement in learning. Instructors need a broad and critical analysis of the significance of differentiated instruction and its effects on students of diverse backgrounds.

Thus, differentiated instructions as an emerging modern concept for teachers, students, schools and parents act as a turning point in understanding student engagement in learning.

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However, in a critical and creative analysis and evaluation of the benefits and importance of differential instructions , the advantages clearly outweigh the disadvantages (Valiandes, 2015). Nevertheless, further research should be done on education reforms based on differentiated lessons that provoke student engagement and success. Current empirical studies on the effect of differentiated instruction on student achievement, learning behaviors and attendance are scarce. The findings of this study will contribute to fulfilling the missing research gap.

## **Chapter 3. Research Design and Methodology**

### **Introduction**

This study investigated the effect of differentiated instruction on student engagement among 6<sup>th</sup> grade middle school students in two reading classes. This chapter detailed the type of methodology utilized and the research design that led the study. Additionally, this section detailed the research instruments used to collect the data, the data analysis method, limitations, as well as the procedures for conducting the research.

### **Research Questions**

The major research question of this study was:

What is the effect of differentiated instruction on student engagement in elementary schools?

The research sub-questions are:

1. How are the teaching strategies and environment of a differentiated instruction class different from those of a traditional class?
2. What is the effect of differentiated instruction on student achievement?
3. What is the effect of differentiated instruction on student learning behavior?
4. What is the effect of differentiated instruction on student attendance?

### **Specific Methodologies**

A mixed methodology utilizing qualitative and quantitative approaches gave the researcher an opportunity to provide a thorough account of how differentiated instruction as an instructional strategy addressed classroom instructional needs and student engagement. The qualitative method enabled the researcher to obtain lived experiences regarding their educational instruction and the response of the students through interviews with the teachers. The quantitative methodology enabled the researcher to collect numerical data through the use of

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student surveys that was administered at the beginning and end of the data collection period.

According to Wyse (2011), qualitative research is an exploratory study, and it is used in gaining understanding of essential opinions, motivations, and reasons. Qualitative research offers help or insights in understanding the problem and the hypotheses for the quantitative study (Delamont & Jones, 2012). According to Harrell and Melissa (2009), “interviews, focus groups, or observations help in the interpretation of the results in the qualitative study” (p. 12). Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables in turn can be measured in magnitude by the use of specially designed instruments (Creswell, 2013). In using the mixed research method, Creswell claimed that mixed research method is gaining popularity because it utilizes the strengths of both qualitative and quantitative research. Also, the social and humanistic complexity of the research studies is increasing. Many researchers find that by employing only qualitative or quantitative research method is inadequate in addressing such complexities (Creswell, 2013).

This study was consistent with interpretivism, a specific epistemological approach to the creation of new understandings. An interpretivist approach allowed the researcher to examine how differentiated learning affects the students and the mechanism through which it impacts them as constructed by the students (Guba & Lincoln, 2005). One of the key advantages of this approach is that it provided the most appropriate method to construct knowledge. To study the impact, one must immerse oneself into the world of the students, observe and record how differentiated learning affects them both in terms of achievement and socialization. To fully understand how students react, the researcher must use a methodological approach that allows collection and analysis of comprehensive data on the phenomena (Creswell, 2013).

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Learning is not a simple process. For one to assess the impact on learning, he or she must immerse himself or herself into the learning process (Mack, 2010). There are many variables that affect the learning process. Assessing the learning process is best during the process and not after the process. By observing the interaction of the students during differentiated learning, it is possible to understand the process as well as the outcome of the process (Mack, 2010).

### **Research Setting and Participants**

The school that was represented in this study was a Title I middle school in rural middle Georgia. The school consisted of approximately 81 faculty and staff members, and 702 students. The school population included 40% Hispanic, 48% African American, 5% White and 7% other students. In addition, there were three administrators, two counsellors, and two instructional coaches. This school was selected because this is the school where the researcher is employed. The setting allowed the researcher to effectively complete the research criteria during the entire school term for which the study was conducted.

The regular education 6<sup>th</sup> graders in two different literature classes of this school were selected for this study. Students in the two classes were taught by the same teacher. The teacher employed group differentiated instruction in one class (the 2<sup>nd</sup> Period Class) while traditional teaching method in the other class (the 3<sup>rd</sup> Period Class). The 2<sup>nd</sup> Period Class had 8 male students and 15 female students. The 3<sup>rd</sup> Period Class had 10 male and 15 female students. A total of three 6<sup>th</sup> grade teachers were invited to participate in interview to indicate their perceptions of how differentiated instruction could affect student achievement, student learning behavior and student class attendance. School authorities were contacted for attaining permission for frequent and constant interaction with the students and the teachers.

### **Duration of Research**

To attain sufficient data for the study, the duration of the study was a maximum of eight weeks. Across this period, the development and improvement in the abilities and achievement of students were closely observed through various methods. The data obtained through these methods were recorded and analyzed continuously to assess the effects of various changes made in the strategies of differentiated instructions used during the entire period.

### **Positionality**

The researcher is an administrator in a small rural town in Georgia and has reinforced the awareness of professional development, especially in multi-ethnic classes. The researcher has been in the education field throughout her professional career, with tenure in the district starting in 2019. The researcher's familiarity with the teaching practices and professional development offered at the elementary school within this district will help the trustworthiness and validity of the findings. The researcher interacted with other teachers regarding this topic. More significantly, the researcher visited the library so that she can obtain more information on this issue. Peer reviewed journals were of the essence as the researcher was able to get the full information and quote significant parts on differentiated instruction. The researcher meticulously approached all findings to minimize the prejudice that may have arisen from the researcher's experience at the research site. To alleviate the risk of changing the interpretive process toward the researcher's personal frame of reference, the researcher asked open-ended questions and cautiously inspected all data during interpretive analysis.

### **Data Collection Plan**

Demonstration of the trustworthiness of data collection is one aspect that supports a researcher's ultimate argument concerning the trustworthiness of a study (Rourke & Anderson,

2004). Selection of the most appropriate method of data collection is essential for ensuring the credibility of content analysis (Graneheim & Lundman, 2004). Thus, it is eminent that the method used for collecting data is far more important than perceived in general. After extensive research and planning the data collection method was selected.

To examine how individualized instruction is different from traditional instruction, data were collected by the researcher through interviews with the classroom teachers and classroom observation. Data of learning environment of the two classes were also collected by the researcher through class observations of learning activities.

Student achievement data were collected from two different sources: (1) A teacher made reading test conducted at the beginning and end of the data collection period; (2) The researcher conducted an interview with the teachers to generate data about the effect of differentiated instruction on student achievement from the teachers' perspective.

Student learning behavior data were collected in the following ways: a) The researcher conducted a student survey to solicit data about student perceived learning behaviors in each of the reading classes; b) The researcher interviewed the teachers regarding differentiated teaching strategies and their effect on student learning behaviors ; c) The researcher performed class observation to witness any notable learning behaviors as a result of differentiated instruction.

Student attendance data were collected (1) by referencing the data from the teacher's class attendance sheet and (2) by interviewing the teachers about the effect of differentiated instruction on student attendance.

**Teacher Interviews.** A teacher interview is a face-to-face inquiry to a specific targeted population (Brayda & Boyce, 2014). The purpose of the teacher interview is to gather more information to answer the research questions. Teachers play a very important role in the



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improvement and learning of students. Their efficiency is to provide the students instructions and tasks in a manner that fulfils the needs of every student specifically without deterring the growth of other students. In this study, three 6<sup>th</sup> grade teachers including the one teaching 6th grade reading in the same school were invited for interview to discuss their perceptions of the impact of differentiated instruction on student achievement, student learning behaviors and student class attendance.

**Participant Observation.** According to DeWalt and DeWalt (2011), participant observation is a qualitative method used to get insight and greater understanding of a phenomenon. Each class of students will be observed 14 times during this nine-week period. The level of learning engagement of every student in each class will be recorded and compared to evaluate their improvements if any. This will further help in discovering situations where the student was engaging better in some tasks and underperforming in others.

### **Data Collection Tools**

The following instruments were used to collect data for this study.

1. I-Ready made reading test was conducted at the beginning and the end of the six week unit.
2. Teacher Interview Form was used to guide the foci of the teacher interviews. A total of six teachers were interviewed in this six-week period. (see Teacher Interview Form in Appendix A.)
3. Class Observation Form was used by the researcher for class observation of student learning behaviors and environment. Each class of students was observed 14 times during the nine-week period. (see Class Observation Form in Appendix B.)

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4. Student Learning Behavior was measured by the student survey developed by Ferrier (2007). This tool has been validated by Ferrier (2007) in his research on Student Learning Behavior. This survey instrument was selected because it aligns with this research and allows data collection for this study. The student responses to the survey items reflected the student learning behaviors in this six- week period (see Student Learning Behavior Record in Appendix C).
5. Student Class Attendance Report was used by the teacher to record the daily student attendance of the two classes of students in this six-week period. (An electronic report was retrieved from the online student attendance report)

The following table shows how each of the research questions was answered by the data being collected by their corresponding data collection tools:

Table 1

*Data Collection Tool*

Study Question	Type of data that will be collected	Collection Tool
How are the teaching strategies and environment of a differentiated instruction class different from those of a traditional class?	<ul style="list-style-type: none"> <li>• Classroom observations by researcher</li> <li>• Teacher interviews conducted by researcher</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom observation form created by researcher</li> <li>• Teacher interview form created by researcher</li> </ul>
What is the effect of differentiated instruction on student achievement?	<ul style="list-style-type: none"> <li>• Student test scores</li> <li>• Teacher interviews conducted by researcher</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher made reading Pre and Post Tests</li> <li>• Teacher interview form created by researcher</li> </ul>
What is the effect of differentiated instruction on student learning behavior?	<ul style="list-style-type: none"> <li>• Observations conducted by researcher</li> <li>• Student survey data</li> <li>• Teacher interviews conducted by researcher</li> </ul>	<ul style="list-style-type: none"> <li>• Class observation form created by researcher</li> <li>• Survey developed by Ferrier (2007)</li> <li>• Teacher interview form created by researcher</li> </ul>
What is the effect of differentiated instruction on student attendance?	<ul style="list-style-type: none"> <li>• Attendance data</li> <li>• Teacher interviews conducted by researcher</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher generated class attendance report</li> <li>• Teacher interview form created by researcher</li> </ul>

The data collection forms (Class Observation Form and Teacher Interview Form) were created by the researcher with reference to the current literature and was critically reviewed by a panel consisting of five teachers. The panel reviewed the contents, the language and the format of the different data collection forms to determine if these forms were appropriate for data collection of the study. All the teacher comments and recommendations for revision of these

forms were carefully examined and considered for revision before these data collection forms were actually used.

### **Data Analysis**

In order to achieve triangulation, various types of data were collected and examined. An initial investigation was conducted after the responsive interviews and classroom observation. The researcher used a journal to store relevant qualitative information and identify and classify the patterns or topics that arose from the data collected. The data were stored in a journal at each stage of data collection and was charted accordingly to display the results of data collection. Interviews along with tapes and audio from other electronic devices was transcribed precisely for analysis. This technique of dictation is supported by Hesse-Biber and Leavy (2006):

It also ensures that early on, the researcher is aware of his or her own impact on the data gathering process and he or she has an opportunity to connect with this data in a grounded manner that provides for the possibility of enhancing the trustworthiness and validity of his or her data gathering techniques. (p. 347)

The researcher transcribed verbatim of all the interview sessions. As recommended by Hesse-Biber and Leavy (2006), data were organized by place, date, and time. A separate binder was made for each participant. The binder included transcriptions and notes from the interviews, memos, and any other documents deemed necessary.

Lastly, the researcher analyzed the mixed method data collected with the help of the computer software' MAXQDA and SPSS. According to the Encyclopedia of case study research (2010, p. 190), "MAXQDA is a software appropriate for textually based case study research." According to Verma (2013, p1), "SPSS software assists in addressing the whole analytical process, from scheduling and data gathering to investigation, reporting, and deployment." The SPSS software provided the researcher easier access to quantitative data and was able to manage

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it. The SPSS helped in coding the quantitative data collected. The MAXQDA software was used to perform an analysis of the qualitative classroom observation data and enabled the researcher to analyze the results.

To answer research sub-question 1 (comparing differentiated instruction and traditional instruction), teaching strategies and the learning environment data of the two classes collected from the Class Observation Form were compared by reviewing the resultant frequency counts. Additional data were collected from the teacher interviews to indicate the difference of differentiated instruction and traditional instruction.

To answer research sub-question 2 (student achievement), the pre-test reading scores and the post-test reading scores of the two groups (with differentiated instruction and with traditional instruction) were compared by using the t-Test. Qualitative data collected from teacher interviews were examined by categorizing them by codes and identifying the emerging themes. All quantitative and qualitative data collected were triangulated to generate answers to the Research Sub-question 2.

To answer Research Sub-question 3 (student learning behavior), quantitative data collected from the student survey records were analyzed by with the use of t-tests. Qualitative data collected from teacher interviews, and research observation were examined by categorizing them by codes and identifying the emerging themes. All quantitative and qualitative data collected were triangulated to generate answers to the Research Sub-question 3.

To answer Research Sub-question 4 (student attendance), quantitative data collected from the teacher class attendance records were analyzed by descriptive statistics of frequency counts. Class attendance records of the two classes of students were statistically compared by using t-tests. Qualitative data collected from teacher interviews were examined by categorizing them by

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codes and identifying the emerging themes. All quantitative and qualitative data collected were triangulated to generate answers to the Research Sub-question 4.

The major research question of this study relates to the effect of differentiated instruction on student engagement in learning. As defined in Chapter 1, student engagement in learning in this study refers to student achievement in reading, student learning behaviors and student class attendance. To answer the major research question, the findings of this study that serve to answer Sub-Question 1, Sub-Question 2, Sub-Question 3 and Sub-Question 4 were summarized and analyzed. The results of this summary analysis generated a composite answer to the major question of student engagement which relates to student achievement in reading, student learning behaviors and student class attendance. The following table indicates clearly how data were collected and analyzed to generate the answer to each of the research sub-questions:

**Table 2**

*Data Collection Tools*

Study Question	Type of data that will be collected	Method of Analysis
How are the teaching strategies and environment of a differentiated instruction class different from the traditional class?	<ul style="list-style-type: none"> <li>• Classroom observations by researcher (Quantitative)</li> <li>• Teacher interviews conducted by researcher (Qualitative)</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive statistics of frequencies</li> <li>• Coding and observing emerging themes and patterns</li> </ul>
How does differentiated instruction affect student achievement?	<ul style="list-style-type: none"> <li>• Student test scores (Quantitative)</li> <li>• Teacher interviews conducted by researcher (Qualitative)</li> </ul>	<ul style="list-style-type: none"> <li>• t-Test</li> <li>• Coding and observing emerging themes and patterns</li> </ul>
How does differentiated instruction affect student learning behavior?	<ul style="list-style-type: none"> <li>• Observations conducted by researcher (Quantitative)</li> <li>• Data generated by the student survey (Quantitative)</li> <li>• Teacher interviews conducted by researcher (Qualitative)</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive statistics of frequencies</li> <li>• t-test</li> <li>• Coding and observing emerging themes and patterns</li> </ul>
How does differentiated instruction affect student attendance?	<ul style="list-style-type: none"> <li>• Attendance data from teacher record (Quantitative)</li> <li>• Teacher interviews conducted by researcher (Qualitative)</li> </ul>	<ul style="list-style-type: none"> <li>• t-test</li> <li>• Coding and observing emerging themes and patterns</li> </ul>

## **Confidentiality/ Ethics**

### **Informed and voluntary consent.**

The teachers' consents were essential to make sure that they are conducting themselves appropriately, and they provided the essential information needed for this research. In the conscription procedure segment of this chapter, five levels of consent are identified and was secured before data is gathered: consent from the administrator, instructional coach, students, parents, and the teacher. An information sheet detailing the specifics about the research, the interview questions and time allotted to complete the research was covered.

### **Respect for the rights of confidentiality or privacy.**

The moral principles of lessening detriment to the teachers generate the importance of ensuring that their identity continues to remain confidential throughout the entire process (Bryman, 2012). It is believed that the participants were candid and felt comfortable and confident to trust that the researcher would not divulge the data collected to compromise their job or relationships with their co-workers. The agreement forms offered a categorical promise that their identities will remain confidential, with the autonomy to withdraw.

### **Minimization of harm.**

The interviews were held in the researcher's office away from other faculty and staff members where there was complete privacy. It was convenient location, and the participants were able to easily access the back door. The questions were created so that the interview was not be a lengthy process. The researcher practiced interviewing techniques so that the questioning, prompting, and clarifying skills were focused thus minimizing time used to interview the participants.



**Cultural and social sensitivity.**

The prospective participants included a sample of students from the research site. The students were culturally diverse. As a result, the researcher was mindful as to the manner in which phrases are used during the interview - not sounding biased, accusatory, or one-sided.

**Trustworthiness & Credibility**

Credibility was determined through member checking. Triangulation of the data was used over time to extend engagement with participants and via multiple data sources. Participants were provided with opportunities to clarify responses, if necessary, to ensure accuracy prior to publishing the data. Credibility was established through interviews, and class observations.

From a qualitative perspective, transferability was first and foremost the responsibility of the researcher by ensuring transparency. One can foster transferability by completing a thorough job of relating the research milieu and the assumptions that are to be perceived essential to the research (Creswell, 2012). An extensive description of the data collection process provided a notion of ease to the participants and increased transferability throughout the research process.

In this case, dependability refers to how consistent the research methods are. In completing qualitative research, it is not of the essence to have dependable data but preferably to put checks on the data's dependability to ensure the same study can be conducted utilizing the same methods (Creswell, 2012). Checks on the dependability in this research study was for the researcher to record and transcribe the interviews, as well as verify the transcripts against the recordings. The researcher did not include any personal thoughts or bias and only used the data collected from the participants of the study.

Through confirmability, the researcher ensured predispositions were evident to the reader through a personal and worldview statement. It should be clear to the reader that the information

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presented was derived from the participants and not the researcher. Each data collection was followed by a summary. Structured interviews, and class observations was used to triangulate the data. The researcher provided participants with feedback of their interview approximately two weeks afterwards so that they provided clarification on the data they shared.

### **Limitations**

Self-reported data are limited, as one must rely on what the respondents say whether in focus groups, interviews, at face value or on questionnaires (Price & Murnan, 2014). The biasness of respondents is also a major limitation as some individuals believe that the information may be used against them. However, it is not possible to separate any research from the person doing the research. Interpretivists could increase the objectivity of their research by applying objective methods of data analysis that allows the person to construct meaning from the data rather than from one's own perceptions. Additionally, criticism arises from its failure to acknowledge the existing inequalities in education (Creswell, 2013). Lastly, another salient drawback is how to determine if the student's increase in attendance is brought on by engagement or external situations. The researcher used coherent criteria to select students with minimal to no attendance issues.

### **Summary**

The purpose of this mixed method research study was to provide in-depth information regarding the effect of differentiated instruction on student engagement which in this study refers to student achievement, student learning behavior and student class attendance. The findings of this study helped school administrators and teachers determine the extent of employing differentiated instruction in the classroom. It is important for our educators to make an impact in the classroom. As outside entities, it is our job to provide teachers with the best instructional practices and support so that they are able to remediate or accelerate the academic development

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of their students. This research impacted the teachers and students, and the audience of this research will find reliable information because of the integrity of this research.

## Chapter 4. Research Findings

The purpose of this mixed-method study was to investigate the effect of differentiated instruction on student engagement among 6th-grade elementary students in two reading classes. The engagement elements were pre- and post-assessments, interviews, surveys, attendance and behavior records. The findings of this study would indicate if student engagement would increase if students were provided with lessons designed to address individual needs. Student engagement in this study is defined as student academic achievement, learning behavior and class attendance.

During this study, one teacher volunteered to deliver instruction to the two classes differently, while three teachers agreed to be interviewed. All of the students, along with their parents, agreed to participate in the study. The study consisted of eight weeks of differentiated instruction for one class (the 2<sup>nd</sup> Period Class) while the other class (the 3<sup>rd</sup> Period Class) received no additional strategies to differentiate their work. The results of data analyses are presented in this chapter to answer the major research question and sub-questions:

The major research question is:

What is the effect of differentiated instruction on student engagement in elementary schools?

The research sub-questions are:

1. How are the teaching strategies and environment of a differentiated instruction class different from those of a traditional class?
2. What is the effect of differentiated instruction on student achievement?
3. What is the effect of differentiated instruction on student learning behavior?
4. What is the effect of differentiated instruction on student attendance?

**Results of Data Analysis**

**Student Demographic Information**

The descriptive data of the two classes of students were reported on the basis of gender and ethnicity. Results of the analyses showed that 34.8% of students in the 2<sup>nd</sup> Period Class and 40% of students in the 3<sup>rd</sup> Period Class were males, while 65.2% of students in the 2<sup>nd</sup> Period Class and 60% of students in the 3<sup>rd</sup> Period Class were females (See Table 1). Since the gender compositions of the two classes were similar, it was determined that student gender would not be a variable that could significantly impact student academic achievement, learning behavior and class attendance in class comparisons. Results of the data analyses also indicated that the majority of the students by ethnicity in the two classes were Afro-Americans (52.2% in the 2<sup>nd</sup> Period Class and 52% in the 3<sup>rd</sup> Period Class). Other minority ethnicities included White and Hispanic populations. Since the ethnic compositions of the two classes were not significantly different, it was determined that ethnicity would not be a control variable involved in the statistical analyses.

**Table 3**

*Student Demographic Information by Gender and Ethnicity*

	2 <sup>nd</sup> Period Class		3 <sup>rd</sup> Period Class	
	N	%	N	%
<b>Gender</b>				
Male	8	34.8	10	40
Female	15	65.2	15	60
<b>Ethnicity</b>				
White	5	21.7	2	8
Afro-American	12	52.2	13	52
Hispanic	6	26.1	10	40

**Analyses of Quantitative Data**

**Student test scores**

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To identify the effects of differentiated instruction on student achievement, students' test scores in Pre-and Post-time frames were compared. To determine if there was a statistically significant difference between student Pre-and Post-test scores, Paired t-Test was used to test the null hypothesis stating that there was no significant difference in student achievement between the Pre- and Post-test scores.

Test scores were compared before and after differentiated instruction in the 2<sup>nd</sup> Period Class. On average, students' achievement was better after differentiated instruction ( $M=78.61$ ,  $SD=12.62$ ) than before differentiated instruction ( $M=60.17$ ,  $SD=22.91$ ). This improvement, 18.44, was statistically significant,  $t(22) = -4.108$ ,  $p = .000$ . The null hypothesis was rejected, and there was a statistically significant difference between student Pre- and Post-test scores in the 2<sup>nd</sup> Period Class which employed differentiated teaching strategies (see Table 2 and Table 3).

**Table 4**

*2<sup>nd</sup> Period Class Student Test Scores*

Pair 1	Mean	N	Std. Deviation	Std Error Mean
Pre-test Scores	60.17	23	22.910	4.777
Post-test Scores	78.61	23	12.623	2.632

**Table 5**

*t-Test - 2<sup>nd</sup> Period Class Student Test Scores (Pre-test and Post-test comparison)*

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre-test Scores		21.523	4.488	-27.742	-9.127		22	.000
	Post test Scores	18.435					4.108		

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The same Paired t-Test was calculated for the student Pre- and Post-test scores of the 3<sup>rd</sup> Period Class. Results of the analysis revealed that because,  $p\text{-value} > 0.05$ , the null hypothesis that there was no significant difference between the student Pre- and Post- test scores was confirmed. There was no statistically significant difference between Pre ( $M=45.24, SD=27.02$ ) and Post-test ( $M=50.08, SD=22.45$ ) student scores in the 3<sup>rd</sup> Period Class ( $t=-.988, p=.33$ )  $t(24) = -.988, p = .33$  (See Table 4 and Table 5).

**Table 6**

*3<sup>rd</sup> Period Class Student Test Scores*

Pair 1	Mean	N	Std. Deviation	Std Error Mean
Pre-test Scores	45.24	25	27.025	5.405
Post-test Scores	50.08	25	22.446	4.489

**Table 7**

*t-Test - 3<sup>rd</sup> Period Class Student Test Scores (Pre-test and Post-test Comparison)*

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Difference Lower Upper			
Pair 1	Pre-test Scores		24.503	4.901	-14.954	-5.274	24	.333
	Post test Scores	4.840					.988	

### Student Learning Behavior

To determine if there was any effect of differentiated instruction on student learning behavior, the researcher first summarized the data from a student survey (16 questions) to get the student learning behavior variable. The student learning behavior was compared between 2<sup>nd</sup> Period Class and 3<sup>rd</sup> Period Class by using an Independent Sample t-Test. The results of the two samples Independent t-Test revealed that there was no statistically significant difference ( $t= -$

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.48,  $p=.633$ ) between student learning behaviors in the 2<sup>nd</sup> ( $M=65.26$ ,  $SD=10.83$ ) and 3<sup>rd</sup> period ( $M=66.84$ ,  $SD=11.86$ ) classes (See Table 6 and Table 7).

**Table 8**

*Descriptive Statistics – Student Learning Behavior (2<sup>nd</sup> Period Class and 3<sup>rd</sup> Period Class)*

Student Learning Behavior				
Period	N	Mean	Std. Deviation	Std. Error Mean
2 <sup>nd</sup>	23	65.2609	10.82597	2.25737
3 <sup>rd</sup>	25	66.8400	11.85917	2.37183

Student learning behaviors of the 2<sup>nd</sup> Period and 3<sup>rd</sup> Period classes were also observed by employing a researcher observation instrument for 14 times in each class. Results of the observation indicated that students in the 2<sup>nd</sup> Period Class demonstrated more individualism in completing their assignments than students in the 3<sup>rd</sup> Period Class. In all of the four items observed, students in the 2<sup>nd</sup> Period Class received more "Often" checkpoints (averaged 84%) than students in the 3<sup>rd</sup> Period Class (averaged 37.3%). This is clear evidence to show that teacher differentiated instruction has positively impacted student learning behavior (See Table 12).



**Table 9**

*Independent Sample t - Test – Student Learning Behavior (2<sup>nd</sup> Period Class and 3<sup>rd</sup> Period Class Comparison)*

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Student Learning Behavior									
Equal Variances Assumed	.214	.646	-.480	46	.633	-1.57913	3.28704	-8.19559	5.03733
Equal Variances Not Assumed			-.482	45.998	.632	-1.57913	3.27434	-8.17005	5.01179

**Student Class Attendance**

To determine the effect of differentiated instruction on student attendance, the researcher implemented a Paired Sample t-Test to see if there was a statistically significant difference in absences between Pre-Research time (1/14/2022 - 2/25/2022) and Post-Research time (2/28/2022 - 4/22/2022) in each of the 2<sup>nd</sup> Period and the 3<sup>rd</sup> Period Class of students.

First, the data from the 2<sup>nd</sup>-Period Class were used for the testing. The Paired Sample t-Test revealed ( $t=.617, p=.544$ ) that because  $p\text{-value} > 0.05$ , the null hypothesis was not rejected. There was no statistically significant difference in absentees between Pre-Research time (1/14/2022 - 2/25/2022) ( $M=1.09, SD=1.76$ ) and Post Research time (2/28/2022 - 4/22/2022) ( $M=0.83, SD=1.40$ ) in the 2<sup>nd</sup> Period Class (See Table 8 and Table 9).

**Table 10***Descriptive Statistics -Absentees in Pre- and Post-Research Time (2<sup>nd</sup> Period Class)*

Time	Mean	N	Standard Deviation	Standard Error Mean
Pre-Research (1/14/2022 – 2/25/2022)	1.09	23	1.756	.366
Post Research (2/28/2022 – 4/22/2022)	.83	23	1.403	.293

**Table 11**

*Paired Sample t - Test -Absentees in Pre- and Post-Research Time (2<sup>nd</sup> Period Class) (Pre- and Post-Research Time Comparison)*

Time	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				Lower	Upper			
Pre Research	.261	2.027	.423	95% Confidence Interval Difference	1.138	.617	22	.544
Post Research				-.616				

For the test of absentee data of the students of the 3<sup>rd</sup>-period class, Paired Sample t-Test revealed ( $t=-.762$ ,  $p=.453$ ) that because  $p\text{-value}>0.05$ , the null hypothesis was not rejected. There was no statistically significant difference in absentees between Pre-Research (1/14/2022 - 2/25/2022) ( $M=0.92$ ,  $SD=1.35$ ) and Post-Research (2/28/2022 - 4/22/2022) ( $M=1.28$ ,  $SD=2.56$ ) times in the 3<sup>rd</sup> Period Class (See Table 10 and Table 11).

**Table 12***Descriptive Statistics -Absentees in Pre- and Post-Research Time (3<sup>rd</sup> Period Class)*

Time	Mean	N	Standard Deviation	Standard Error Mean
Pre-Research (1/14/2022 – 2/25/2022)	.92	25	1.352	.270
Post Research (2/28/2022 – 4/22/2022)	1.28	25	2.558	.512

**Table 13**

*Paired Sample t - Test -Absentees in Pre- and Post-Research Time (3rd Period Class) (Pre- and Post Research Time Comparison)*

Time	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval Difference				
				Lower	Upper			
Pre Research Post Research	-.360	2.361	.472	-1.334	.614	-.762	24	.453

**Differences between A Differentiated Instruction Class and A Traditional Class**

In order to answer the first sub-question: “How are the teaching strategies and environment of a differentiated instruction class (2<sup>nd</sup> Period Class) different from those of a traditional class (3<sup>rd</sup> Period Class)?”, descriptive statistics of frequency count were employed to calculate the percentages of check marks on each of the three choices: “Often”, “Sometimes” and “Minimal” in both 2<sup>nd</sup> and 3<sup>rd</sup> Period classes. The averages of all the observations were calculated in the teaching strategies variable and the environment variable between the 2<sup>nd</sup> Period Class and the 3<sup>rd</sup> Period Class. (See Table 12.)

Results of the analyses indicated that the 2<sup>nd</sup> Period Class way exceeded the 3<sup>rd</sup> Period Class in the number of "Often" observed checkpoints. In teacher instructional strategies, the teacher in the 2<sup>nd</sup> Period Class utilized a variety of assessments, met the diverse student needs, presented students with learning options, utilized problem-solving activities and used small group instruction. In the learning environment, the 2<sup>nd</sup> Period Class was observed to be more positive in presenting an academic learning environment, to have students comfortable asking questions or for assistance, have room for movement during sessions, have individual working space for students and have the learning materials for students to succeed.

**Table 14**

*Summary of 14 Differentiated Classroom Observations (Percent of "Often" checked among "Often," "Sometimes" and "Minimal")*

	2 <sup>nd</sup> Period Class	3 <sup>rd</sup> period Class
Student Learning Behaviors	Often %	Often %
On task, while working alone	79	43
Works effectively in small groups	86	50
Works on their individual skill level	100	21
Uses Self Discipline	71	36
Average % of "Often"	84	37.3
Teacher Instructional Strategy	Often %	Often %
Utilizes a variety of assessments	93	36
Meeting the diverse needs	100	14
Students presented with learning options	100	0
Utilizing problem-solving activities	100	0
Using small groups	100	43
Average % of "Often"	98.6	18.60
Learning Environment	Often %	Often %
Presents an academic learning environment	100	100
Students comfortable asking questions or for assistance	86	57
Room for movement during sessions	100	36
Individual working space for students	100	100
Learning materials for students to succeed	100	100
Average % of "Often"	97.2	77.4

### Analysis of Qualitative Data

An interview was conducted among three instructors to determine how the participants defined differentiated instruction and felt about its effectiveness. After the data were collected, research codes were observed and common themes emerged within the responses. When asked about their definition of differentiation and diverse needs, they commonly agreed that culture, ethnicity, learning styles and academics were parts of who students are and partially determine what they need as students. This theme was reflected in the response of Teachers 1, 2 and 3, all

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of whom highlighted the role of different variables such as ethnicity, race, culture, disability status, and socio-economic background, in shaping student needs:

*The diverse student population in my classroom consists of the many differences that are represented including race/ethnicity, culture, level of understanding, background knowledge/lived experiences, and socioeconomic status. The diverse student needs include academic (remediation/acceleration), health, safety, and nutrition.* (Teacher 1)

*The student population in my classes are diverse in race, religion, socioeconomic backgrounds, gender orientation, and academic abilities. Some obvious needs are for the basics such as food, companionship, love. Most of my students need reassurance and stability. Academically, they need caring adults who teach with structure, consistency, and relevance.* (Teacher 3)

The teachers in the interview commonly agreed that students might need a variety of work based on their ethnicity or cultural background, and multiple learning pathways should be provided.

This viewpoint was particularly highlighted by Teacher 2, who noted:

*I define diversity by identifying all of the ways that students are different from one another. These differences could be related to their identified race, ethnicity, or cultural background. They could be related to their living situation. They could be related to their sexual or gender identities. They could be related to having disability or not having disability. These differences could be related to student perceptions of themselves and school, or their academic achievement or abilities.*

Because there were a plethora of Hispanic students, they may need additional support because of language barriers. All the teachers agreed that nutritional and emotional support, or lack thereof, could relate to academic deficits as well as learning styles and how their needs were approached.

**Table 15**

*Teacher Interview Questions (Understanding of Student Diversity)*

Themes Found Within Data Interviews	Number of Times Referenced During Interviews
Culture	3
Ethnicity	3
Learning Styles	2
Academics	2
Social Emotional Learning	2
Learning Styles	2
Needs	12

When asked how differentiation is utilized to engage students, there were several common themes identified, such as access points, scaffolding, doable, achievable, and goals. The responses of Teacher 2 and 1 below summarise the multifarious differentiation approaches adopted in the classrooms:

*Differentiated instruction means providing multiple pathways to accomplish a single goal. I always envision the mazes that you sometimes find on the back of cereal boxes: you can start in three different places and there are many different possible paths, but they all lead to the same exit. You can differentiate the content that students are engaging with. For example, my collab classes read the version of Stamped adapted for young readers (~160pgs) while my advanced classes read the version adapted for young adults (~280pgs), though all classes completed similar assignments aligned to the exact same standards. You can differentiate by process, meaning that student actions vary according to student need. In collaborative classes (where many students have a read aloud accommodation for GMAS testing and would struggle to comprehend text read*

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*independently), we read most texts out loud, providing scaffolding, inserting additional examples, defining terms, and clarifying main points as we go. (Teacher 2)*

*Teachers utilize differentiated instruction to make content accessible for students.*

*Students are more apt to give up and/or not try when they are not able to access the content. Their teachers use scaffolding techniques to help students engage with the content. As students begin to catch on, the scaffolds are eventually removed allowing students to experience grade-level content. (Teacher 1)*

The teachers believed that students should have choices in terms of how they approach learning and completing assignments. Students are taught specific strategies that they can use to start an assignment at their level of comfort and then spiral upward to ensure that they receive Tier I instruction. According to the interviewees such as Teacher 2 and Teacher 3, those strategies could help the students complete assignments successfully:

*Differentiated instruction is beneficial to students because it allows them to work on assignments that are engaging and challenging and fitted to their needs and learning preferences. When students see the opportunity for success, they try harder than when they don't see a viable path forward. Furthermore, using the principles of universal design means that differentiated opportunities are provided to all students, not just those identified by the teacher (like having ramps available to everybody, not just folks in wheelchairs). I have been surprised and gratified to see students find success in unexpected ways because they took advantage of differentiated options that I had created with other students in mind. (Teacher 2)*

*Overall, it is beneficial because it allows students to grow and work to their strengths and potential. A gifted student can take off on a divergent path and really push his/her*

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*own boundaries while at the same time a student who needs extra support can benefit from a small group setting with the teacher and a less complex text that still illustrates the concepts of the standards. Sometimes it can be detrimental if visible accommodations are questioned and the teacher isn't comfortable with addressing those questions.*

(Teacher 3)

They also believe that assignments should be scaffolded so that they are doable and achievable.

In the excerpt below, Teacher 3 and Teacher 1 highlighted the benefits of scaffolding for student learning, emphasising its role on the learning environment as a moderating variable:

*Meeting students where they are and scaffolding up can only build relationships and create a welcoming and safe environment so students feel free to take risks and try new concepts. Differentiation provides that scaffolding for students, whether the differentiation takes the form of providing choice, multiple ways to show that the student is learning, the way the students attack a problem, what the final product is, or the text we English teachers use. Students will develop ownership through differentiated instruction and that gives them the impetus to engage.* (Teacher 3)

*Teachers utilize differentiated instruction to make content accessible for students. Students are more apt to give up and/or not try when they are not able to access the content. Their teachers use scaffolding techniques to help students engage with the content. As students begin to catch on, the scaffolds are eventually removed allowing students to experience grade-level content.* (Teacher 1)

If assignments are too difficult, students will give up easily or not perform as well as other students. Teachers agreed that goals should be set and attainable so that students will feel confident and competent.



**Table 16**

*Interview Questions (Implementation of Differentiation Strategies)*

Themes Found Within Data	No. of Times Referenced During Interviews
Access Points	2
Scaffolding	2
Academics	2
Social Emotional Learning	2
Learning Styles	2
Needs	12

The last set of interview questions were centered around behavior, attendance, and achievement. The teachers believed that differentiated instruction affords students the opportunity to feel empowered by completing assignments without assistance as noted by both Teacher 3 and 2 respectively:

*Overall, it is beneficial because it allows students to grow and work to their strengths and potential. A gifted student can take off on a divergent path and really push his/her own boundaries while at the same time a student who needs extra support can benefit from a small group setting with the teacher and a less complex text that still illustrates the concepts of the standards. Sometimes it can be detrimental if visible accommodations are questioned and the teacher isn't comfortable with addressing those questions.*

(Teacher 3)

*Differentiated instruction improves student achievement. Students feel empowered when they have work that is accessible to them, and they feel seen when they realize that their teacher understands and cares about them and wants them to be successful. Providing options to students (even rather similar options) increases buy-in and motivation because it gives students a sense of ownership and autonomy that is quite frankly lacking in most*

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*classrooms across the country. The biggest effect, I think, is that differentiation is the best way to actually help students improve and grow--by providing work at the right level, students can take small steps each day, with each assignment. This kind of continual improvement (which requires that the teacher continually raise the bar) leads to sustained success. (Teacher 2)*

The students feel competent and remain on task, which brings about confidence. Student buy-in keeps the students focused; hence they are less likely to misbehave or cause disruptive behavior.

This point was highlighted by Teacher 3 as follows:

*I believe differentiated instruction improves student behavior. Most student incidents of acting out are behaviors masking confusion or doubt in their own abilities. Students would generally rather be "bad" than be perceived as "slow." If differentiation is handled well and seamlessly, students are encouraged to participate and are less likely to act up. However, if differentiation is perceived as something only for the "slow" kids, the behavior is likely to worsen.*

This linkage between differentiated instruction and student behaviour was also highlighted by Teacher 2:

*Differentiated instruction improves student behavior because students are more engaged with their work and less likely to be bored with an assignment that is too easy or to give up on an assignment that is too hard. Engaged students are generally well-behaved students.*

The teachers also believed that the students were more likely to attend school more regularly as exemplified in the responses of Teachers 1 and 2 respectively:

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*When students are able to access and engage with the content, they are more likely to want to be at school. Whereas, students who often struggle to access the content may engage in avoidance behaviors including absenteeism. (Teacher 1)*

*I do not have data to support this, but I think that properly differentiated instruction is more engaging instruction for students, and students who feel engaged would be more likely to attend school. So, my sense is that differentiated instruction improves student attendance. (Teacher 2)*

**Table 17**

*Interview Questions (Differentiation and student academic achievement, learning behavior and class attendance)*

Themes Found Within Data	No. of Times Referenced During Interviews
Buy-in	2
Targeting	2
Off-task	3
Engage	7
Promote	2
Success	4

### Summary of Findings

The purpose of this study was to assess how differentiated instruction, as an instructional strategy, could help improve student engagement in a reading classroom setting to ensure that no child is left behind during challenging learning tasks. Student engagement in this study is defined to include student academic achievement, learning behavior and class attendance. Data were obtained from interviews with teachers, survey completion by students, pre- and post-test scores, classroom observations, and student attendance records.

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The instructors were interviewed and asked several questions pertaining to differentiated instruction and how it impacted learners from one end of the spectrum to another. Even though the interviewees' responses were varied, they all agreed that differentiated instruction could be effective if instructors teach students through varied learning modalities, opportunities, and directed instruction. It was commonly stated that these practices could help students grow in the academic arena to enhance student attendance, achievement, and positive learning behavior.

In the 2nd Period Class, students were engaged in using kinesthetic modalities (music and movement), auditory and visual opportunities, collaborative and cooperative learning opportunities. Students were allowed to demonstrate learning through various formats - skits/plays, original writing, podcasts, informational videos, and traditional assessments. The lessons were tailored to meet students' needs in that 2nd Period Class. Students in the 3rd Period Class did not receive any individualized attention.

With regards to the research question about how differentiation is utilized to engage students, there were several common themes identified, such as access points, scaffolding, doable, achievable, and goals. The sample of instructors that were interviewed for this study believed that students should have choices in terms of how they approach learning and completing assignments. Students are taught specific strategies that they can use to start an assignment at their level of comfort and then spiral upward to ensure that they receive Tier I instruction. According to the interviewees, those strategies could help the students complete assignments successfully. They also believed that assignments should be scaffolded so that they are doable and achievable. Their logic was that if assignments were too difficult, students would give up easily or not perform as well as other students. Teachers agreed that goals should be set and attainable so that students would feel confident and competent. The teachers believed that

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differentiated instruction affords students the opportunity to feel empowered by completing assignments without assistance. The students feel competent and remain on task, which brings about confidence. Student buy-in keeps the students focused; hence they are less likely to misbehave or cause disruptive behavior. The teachers also believed that the students are more likely to attend school more regularly.

With regards to the research question about how the teaching strategies and environment of a differentiated instruction class differ from that of a traditional class, the findings of this study indicate evidence of the use of a range of teacher instructional strategies. Specifically, it was found that the teacher in the 2<sup>nd</sup> Period Class utilized a variety of assessments, met the diverse student needs, presented students with learning options, utilized problem-solving activities and used small group instruction. In the learning environment, the 2<sup>nd</sup> Period class was observed to be more positive in presenting an academic learning environment, to have students comfortable asking questions or for assistance, have room for movement during sessions, have individual working space for students and have the learning materials for students to succeed.

With regards to the research question on how differentiated instruction impacts student achievement, the test scores compared before and after differentiated instruction revealed that on average, students' achievement was better after differentiated instruction and that this improvement, 18.44, was statistically significant. The same Paired t-Test was calculated for the student test scores of the 3<sup>rd</sup> Period Class. Results of the analysis showed no statistically significant difference between pre and post-test scores in the 3<sup>rd</sup> Period Class. To sum up, it was found that differentiated instruction consequently made a difference in students' achievement.

With regards to the research question concerning how differentiated instruction shapes student learning behavior, an Independent Sample t-Test was used in the present study to

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compare student learning behavior in the 2<sup>nd</sup> Period and 3<sup>rd</sup> Period classes.. The result of the two samples Independent t-Test revealed that there was no statistically significant difference between student learning behavior in the 2<sup>nd</sup> and 3<sup>rd</sup>-Period classes. Student learning behaviors of the 2<sup>nd</sup> Period and 3<sup>rd</sup> Period classes were also observed by employing a researcher observation instrument 14 times for each class. The research findings indicated that students in the 2<sup>nd</sup> Period Class demonstrated more individualism in completing their assignments than students in the 3<sup>rd</sup> Period Class. In all of the four learning behavior items observed, students in the 2<sup>nd</sup> Period Class received more "Often" checkpoints (averaged 84%) than students in the 3<sup>rd</sup> Period Class (averaged 37.3%). Thus, this study found that teacher-individualized differentiated instruction has certain impacts on student learning behavior.

This research also investigated how differentiated instruction impacts student attendance. To evaluate the effect of differentiated instruction on student attendance, a Paired Sample t-Test was run to ascertain if there was a statistically significant difference in absences between Pre Research time (1/14/2022 - 2/25/2022) and Post Research (2/28/2022 - 4/22/2022) time in each of the 2<sup>nd</sup> Period and the 3<sup>rd</sup> Period classes of students. There was no statistically significant difference in absentees between Pre Research time (1/14/2022 - 2/25/2022) and Post Research time (2/28/2022 - 4/22/2022) in the 2<sup>nd</sup> Period and the 3<sup>rd</sup> Period classes. Therefore, the findings of this study indicated that differentiated instruction did not have any effect on students' attendance.

## **Chapter 5. Conclusion**

This study was conducted to examine differentiated instruction as a teaching strategy and determine if it would enhance student engagement. Student engagement in this study was defined in terms of student academic achievement, learning behavior and class attendance. The research was seeking an answer to the following major question: ‘What is the effect of differentiated instruction on student engagement?’ The research additionally addressed the following sub-questions: ‘How are the teaching strategies and environment of a differentiated instruction class different from those of a traditional class?’ ‘What is the effect of differentiated instruction on student achievement?’ ‘What is the effect of differentiated instruction on student learning behavior?’ ‘What is the effect of differentiated instruction on student attendance?’ In this chapter, the implications of the research findings presented in the previous chapter are discussed within the context of the existing literature.

### **Discussion: The Teaching Strategies and Environment of a Differentiated Instruction**

#### **Class as Compared to a Traditional Class**

##### **Teaching Strategies**

The findings of this study that teachers employed a range of differentiated instruction principles were also confirmed in other studies. For example, consistent with previous research, this study found that tiered assessment was a unique feature of the differentiated instruction class when compared to the traditional class. This research finding aligns with Pozas and Schneider's (2019) taxonomy of differentiated instruction which identifies tiered assessments involving the variation of resources and tasks based on student challenge level and other factors, as a characteristic. Scholars such as Pozas et al. (2020), in their research, found that tiered

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assessments were the primary differentiated instruction practice among teachers. Other studies by scholars such as Smit and Humpert (2012) have found that in differentiated instruction classes, teachers typically used tiered assignments to address student needs.

Another practice that separated the differentiated instruction class from the traditional class was that in the former, teachers applied strategies to address diverse student needs. A limitation of this study is that its quantitative component did not explicitly draw out the particular strategies or practices that teachers used to meet the diverse needs of students. In other studies, scholars have shown that teachers address diversity by espousing and teaching different philosophies of thinking (King-Sears, 1997). Other teachers used strategies such as educating students and their parents about differences (Kronberg & York-Barr, 1998) or changing standardized tests to reflect the emphasis on diversity (Aliakbari & Khaled, 2014; Tomlinson, 1995). Other practices linked with differentiated instruction to address diversity in the literature include the organizing of the curriculum on the basis of specific concepts, principles and understandings (Tomlinson, 1999), the implementation of metacognitive activities that urge students to be introspective about their motivation, learning and their emotions (Kronberg & York-Barr, 1998), and the use of heterogeneous groupings that permits students to work, learn and engage with their peers who have different characteristics and learning styles (King-Sears, 1997). Similarly, Pozas and Schneider (2019) noted that some students intentionally compose student workings so that they are either heterogeneous or homogenous based on student interests and performance to meet student's diverse needs. In some differentiated instruction classes, schools also emphasize whole-person education that prioritizes students' cognitive, emotional, social and physical needs (Guild, 1997).



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Chamberlin & Powers (2010) also suggested that teachers can address diversity by directly responding to student differences. This entails accepting students for where they are but with the acknowledgment that they can only understand what they are capable of. Meeting diversity further includes teacher-student collaborations in the learning process (Chamberlin & Powers, 2010). In his study, Tatum (2011) identified the use of instructional recommendations, including establishing connections between teaching instruction and students' background or experiences, leveraging strategic groups and delivering instruction based on cognitive strategies as examples of meeting students' diverse needs. The quantitative component of this research and its focus on statistical data meant that 'meeting diverse needs' was not defined in a nuanced way as compared to the studies cited above, which document the specific strategies used by teachers. Despite this limitation of the present study, in its qualitative component, the sample of instructors provided insight into their ideas of differentiated instruction as related to diversity. They commonly agreed that culture, ethnicity, learning styles and academics are parts of who students are and partially determine what they need as students. They also agreed that students may need a variety of work based on their ethnicity or cultural background, and multiple learning pathways should be provided. Because there are a plethora of Hispanic students, they may need additional support because of language barriers. They all agreed that nutritional and emotional support, or lack thereof, ties into academic deficits as well as learning styles and how their needs are approached.

Aligning with previous research, this study also found that presenting students with learning options was a unique feature of teacher instructional strategies in the differentiated instruction class when compared to the traditional class. Watts-Taffe et al. (2012) found that providing students with learning options is a classic feature of differentiated instruction classes;

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in their study, the differentiated instruction class presented students with learning options so that they could learn at their level, taking into account student differences in learning styles and intelligence. Notably, the instructional strategy of teachers, in terms of presenting students with learning options, aligns with Tomlinson's (2004) conceptual framework. Tomlinson (2004) viewed differentiation of instruction as one of the instructional strategies in his conceptual framework. He proposed that presenting students with learning options is effective because it takes into how a student learns individually and makes sense of information. Tomlinson (2004) suggested that when knowledge is delivered to students according to their preferred learning style, students' psychological and physical needs are met. Further, Tomlinson (2004) suggests that this instructional strategy assists teachers in promoting excellence and equity. These outcomes are achieved because when students are given learning options, content is differentiated based on students learning profiles, interests, readiness and knowledge levels (Santangelo & Tomlinson, 2009).

The findings of this study depart from Tomlinson's (2004) framework in some key ways. Tomlinson (2004) integrated affect with the provision of learning options as a strategy for instructional differentiation. This was based on the logic that providing students with learning options addresses their emotions concerning school-related factors that shape their learning. The link between affect and learning options did not emerge in the present study; however, it has been discussed by other researchers, such as Dosch & Zidon (2014), who argue that affect is embedded in the content produced through students' learning options. They, however, acknowledge that most differentiated instructional styles do not consider the role of affect in shaping student outcomes when considered in relation to learning options. Tomlinson's (2004) conceptual framework also included assessment based on the preferred learning style of students;

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however, this was not observed as a practice in this study. Students were provided with learning options only, and how this shaped assessment was not clear.

The findings of this study in terms of identifying differentiation through providing students with learning options also align with Pozas and Schneider's (2019) taxonomy. Pozas and Schneider (2019) proposed that giving students learning options ensures that they can achieve minimum standards as they are granted autonomy which ensures that they are responsible for their own learning. Further, Pozas and Schneider (2019) suggest that students are empowered to choose what and how to work in terms of choosing their tasking and whether they want to engage in station work or not. Contrastingly, in the present study, instructors believed that students should be taught specific strategies that they can use to start an assignment at their level of comfort and then spiral upward to ensure that they receive Tier I instruction. The instructors also proposed that those strategies help the students complete assignments successfully. They also believe that assignments should be scaffolded so that they are doable and achievable. If assignments are too difficult, students will give up easily or not perform as well as other students. Chamberlain & Powers (2010) have also highlighted that providing students with learning options as part of differentiated instruction is a proactive approach that ensures that lesson plans are tailored to address the differences in student learner preferences. Chamberlain and Powers (2010) propose that this proactive approach is efficient because it means that instruction is not adjusted only when the lessons do not address the requirements of some students. A limitation of this study is that the learning options that were available to students or that students took up did not emerge from the data. Pozas and Schneider (2019), for example, discuss how some students leverage tutoring systems in which competent students assume the role of teacher and tutor students with low abilities. Pozas and Schneider (2019) also discussed

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how some students use staggered non-verbal learning aids. This entails students using learning aids purposefully designed according to their level and learning ability and containing requisite information to assist them in overcoming obstacles within the learning process.

The instructional strategy of teacher in the differentiated instruction class additionally consisted of the utilization of problem-solving learning stations. This finding aligns with existing studies which highlight problem-based learning as a feature of differentiated instruction classes. In their study, Bikic et al. (2015), however, established correlations between the use of problem-solving activities and student progress and academic achievement, while this study did not. Bikic et al. (2015) established in their research that the learning station which consisted of problem-solving activities supported students in connecting their existing knowledge with new theories, concepts and practices, facilitating them to learn via an active process of knowledge construction.

The use of small group instruction via learning stations was found to be a featured instructional strategy in the differentiated instruction classroom. Small group instruction constitutes a common feature of differentiated instruction (Pozas and Schneider, 2019), however, in other studies, small group instruction is used as part of a blended teaching practice. In this study, teachers used only one format, i.e., small groups. Tulbure (2011) however proposes that a blended teaching approach that incorporates whole-class instruction is more effective because it enables teachers to capitalize on the advantages of differentiation while compensating for the disadvantage linked with the traditional approach. Wormeli (2005) also supports Tulbure's (2011) view by suggesting that a blended approach is more suitable for addressing diversity. Wormeli (2005) holds the view that some students learn more effectively in whole-class instruction, while others prefer to work individually or in small groups. Against this backdrop,

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Wormeli (2005) holds the view that depending solely on one pedagogy does not suffice. Thus, the practice of using one pedagogy (small group instruction) that was found in this research contrasts with existing studies that suggest that successful differentiated classes offer varied formats that include small groups, whole-class instruction and individual work. While the finding of this study is divergent from some existing studies, it aligns with others, such as the research of Connor et al. (2011), which found that students make greater gains academically in a literacy class in the areas of reading comprehension and word reading, when teachers differentiated instruction via the use of small learning groups. Academic achievement was higher in the small learning groups than when teachers used whole-class instruction. In a study by Adami (2004), the use of whole-class teaching strategies was viewed as unfortunate because small groups offer flexible grouping based on students' learning profiles and interests. There is, therefore, support in the literature for the use of a single pedagogy based on small learning groups. Ultimately, differentiated instruction is predicated on understanding students' needs and skill profiles and designing the instruction type to align with these needs (Connor et al., 2011). Consequently, it is not a one-size-fits-all approach.

### **Learning Environments**

With regards to the learning environment, this study found that the differentiated instruction class was more positive in presenting an academic learning environment, made students comfortable asking questions or for assistance, had room for movement during sessions, had individual working space for students as well as group activities and had the learning materials for students to succeed. Similarly, Tomlinson et al. (1997) showed that differentiated instruction classrooms are characterized by nurturing environments that mitigate threat and anxiety for students, increasing their engagement at all levels. While Tomlinson et al. (1997)

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linked the nurturing academic environment with student engagement, the instructors in the qualitative interviews evoked the themes of student empowerment, confidence and competence. They suggested that the creation of a nurturing environment affords students the opportunity to feel empowered by completing assignments without assistance. The students feel competent and remain on task which brings about confidence. Student buy-in keeps the students focused; hence they are less likely to misbehave or cause disruptive behavior. Powell (2000) also found that a nurturing environment is efficacious for engaging the wide learning experiences of students, enhancing the learning experience in terms of quality, depth and substance. Tomlinson & Allan (2000) have identified environments within which students can express their humor, access guided help, and benefit from active teacher responses as a characteristic of a differentiated learning environment. These characteristics were confirmed in the present study.

A characteristic of the learning environment in the differentiated classroom examined in this research was the use of individual working spaces for students. This finding is consistent with existing research concerning learning environments that facilitate differentiation. Gentry et al. (2013), for example, found that working space for students constitutes a go-to-place where students can complete specified work based on guidance so that their learning experience is tailored. Another instructional and environmental strategy that facilitates differentiation, discovered in this research, was the use of learning materials for students to succeed. Other studies have found that this strategy typically goes hand in hand with the use of tiered activities, which involve the teacher maintaining the same skills and concepts for each student, but providing different resources to students based on their abilities (Chapman & King, 2005).

Overall, the present study found high evidence of differentiated instruction instructional styles and environments; however, other practices associated with differentiated instruction were

not detected. For example, practices such as the purposeful composition of student groups, learning centers, compacting, conferencing, interest groups and complex instruction (Gentry et al., 2013) were not observed. Hillier (2011) for example, has delineated four key principles of differentiated instruction however, evidence was found for only two of these principles, the linking of assessment and instrument and the manipulation of activity complexity and expectation. The remaining principles that were not evident in this study were collaborative teacher-student learning and students engaging in respectful work.

### **Discussion: The Effect of Differentiated Instruction on Student Achievement**

As presented in the previous chapter, the present study found that, on average, students' achievement was better after differentiated instruction than before, and the improvement was statistically significant. This finding is consistent with existing studies in the literature. In a study by Cusumano and Mueller (2007), which focused on differentiated instruction in an elementary school, the scholars found the school's API scores increased exponentially, and the AYP objectives of the school were also met. Student achievement in this study was not only conceptualized in academic but also behavioral terms. The scholars found that differentiated instruction led to a significant decline in student disciplinary problems while improvements in math, writing and reading performance were recorded. The differentiation methods in Cusumano & Mueller's (2007) research were similar to that of the present study, based on small groupings and consistent progress monitoring. Similarly, in another study by Chamberlin and Powers (2010), differentiated instruction was linked to an increase in students' motivation, self-worth, study habits and engagement, which led to increased achievement. The scholars identified that differentiation instruction presented students with diverse learning experiences, which equipped them to respond successfully to their learning needs, thus improving their academic achievement.

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Tulbure(2011) also found that differentiated instruction enhanced student achievement by leveling the field for student success by providing students with their preferred learning modalities. Valiandes (2015) also found that students in differentiated classrooms performed better than students who did not receive differentiated instruction, while Reis et al. (2011) reported similar findings concerning student achievement in the area of students' comprehension and reading fluency.

While the study findings are confirmed by several empirical studies, it is also challenged by others. The evidence concerning the linkages between differentiated instruction and student achievement is mixed, and there are studies with contrasting findings from this research. For example, a quantitative experimental design conducted by Boges (2015) which used pre- and post-test results to examine the impact of differentiated instruction on reading comprehension scores for low-achieving students, found that there was no significant difference in the mean scores of both groups. The experimental group received differentiated instruction using a whole-class strategy, while the control group did not receive differentiated instruction at all. The scores for both groups were similar, and despite a high standard deviation, the study findings suggested that students' academic achievement was not influenced by differentiated teaching methods, in contrast with the findings of this research. Another study that contrasts with the findings of this study are the research of Little et al. (2014), which studied the impact of differentiated reading instruction on student achievement in the case of middle school children (n=2150). Based on a randomized multi-site cluster study, the study compared pre-test and post-test data for reading volubility and comprehension. The results of the linear modelling used in the research found that similar test scores were achieved for the experimental and control group. Notably, however, the intervention led to some better scores in the area of reading fluency, although the scores were



identical for comprehension. Also contrasting the study findings is the research of Aliakbari et al. (2014), which compared the impact of differentiated instruction and traditional approach on reading comprehension based on a sample of Iranian EFL students. In the study, flexible grouping and tiered assignments were the methods used by teachers to differentiate the product, content and process. In this study, the scholars found that differentiated instruction was only successful in enhancing students' reading comprehension for the elementary and intermediate levels, however, no statistically significant difference was found at the advanced level regarding the impacts on reading comprehension.

### **Discussion: The Effect of Differentiated Instruction on Student Learning Behavior**

In this research, student learning behavior was compared between the 2<sup>nd</sup> Period Class and the 3<sup>rd</sup> Period Class via an Independent Sample t-Test which revealed that there was no statistically significant difference ( $t = -.48, p = .633$ ) between student learning behavior in the 2<sup>nd</sup> Period ( $M = 65.26, SD = 10.83$ ) and 3<sup>rd</sup> Period ( $M = 66.84, SD = 11.86$ ) classes. Student learning behaviors of the 2<sup>nd</sup> Period and 3<sup>rd</sup> Period classes were also observed by employing a researcher observation instrument for 14 times in each class. Results of the observation indicated that students in the 2<sup>nd</sup> Period Class demonstrated more individualism in completing their assignments than students in the 3<sup>rd</sup> Period Class. In all of the four items observed, students in the 2<sup>nd</sup> Period Class received more "Often" checkpoints (averaged 84%) than students in the 3<sup>rd</sup> Period Class (averaged 37.3%). This is clear evidence showing that teacher-individualized instruction has impacted student learning behavior. These findings align with existing studies which suggest that differentiated instruction facilitates students to become more metacognitive and self-directed since they develop an intuitive understanding of themselves as learners (Malacapay, 2019; Santisteban, 2014). Differentiated instruction involves the constant monitoring of student

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interests, readiness and instructional needs, and this process assists students in engaging in dialogue concerning the learning process. Students are provided with an opportunity to set their own personal goals, which empower them as learners that exist in a broader community of learners (Santisteban, 2014). When students set their own learning goals, they develop a nuanced understanding of what they are supposed to learn and in doing so, self-assess their progress. This process has been linked to another finding in this study which concerns how differentiated instruction shaped student learning behavior in terms of the use of self-discipline.

That differentiated instruction promotes self-discipline has been confirmed by other studies. This effect has been linked to the fact that the classroom remains a safe environment with respect to student behavior, meaning that participation and the use of self-discipline are encouraged (Aranda & Zamora, 2016). In a study by Santisteban (2014), the scholar found that, in a literacy class, differentiated instruction did not promote peer or group work; however, there was significant evidence of the use of self-discipline among students in addition to student participation. Santisteban's (2014) research also confirmed other findings made in the present study regarding the impact of differentiated instruction on student learning regarding students on task while working alone and working effectively in small groups. Santisteban (2014) found that in the experimental group that was exposed to differentiated instruction, students were able to work independently, on task, and in small groups. Working in small groups was found to facilitate students to participate fully when performing different tasks. This encouraged them to be on task while working alone (Santisteban, 2014).

In a study by Tieso (2005), it was also found that differentiated instruction enabled students to become confident, competent and self-sufficient due to working in small groups, as compared to their peers receiving traditional modes of instruction. Differentiating instruction in

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small groups means that the preferred learning styles of students can be identified, enabling them to work more efficiently. In keeping with the findings of this study, Gibson (2008) established that students work effectively in small groups because they are offered more opportunities for participation, meaning that they are encouraged to ask more questions. Further, they also receive feedback which, in turn, shapes their learning behaviors. Gibson (2008) found that through the use of work contracts, students' learning becomes more individualized and disciplined because they must organize their work and evaluate their progress while completing their assignments. In small groups, students interact with their teachers while also engaging in collaborative work to gain an understanding of skills and concepts. Their learning style is impacted because they are encouraged to share ideas and talk about their work in small groups to enhance their comprehension. There is evidence in the literature that suggests that small groups support students in asking questions while also responding frequently. Thus, differentiated instruction encourages students to create meaningful learning experiences by impacting students' learning behaviors, as found in this research.

### **Discussion: The Effect of Differentiated Instruction on Student Attendance**

To evaluate the effect of differentiated instruction on student attendance, the researcher implemented a Paired Sample t-Test to ascertain if there was a statistically significant difference in absences between Pre-Research time (1/14/2022 - 2/25/2022) and Post-Research time (2/28/2022 - 4/22/2022) in each of the 2<sup>nd</sup> Period and the 3<sup>rd</sup> Period classes of students. There was no statistically significant difference in absentees between Pre-Research time (1/14/2022 - 2/25/2022) and Post-Research time (2/28/2022 - 4/22/2022) in the 2<sup>nd</sup> Period Class. For the test of absentee data of the students of the 3<sup>rd</sup>-Period Class, there was no statistically significant difference in absentees between Pre-Research (1/14/2022 - 2/25/2022) and Post-Research

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(2/28/2022 - 4/22/2022) times. The findings of this study largely contrast the existing data; however, as a caveat, existing studies that link differentiated instruction and student attendance are few, meaning that the results of such studies are not necessarily generalizable. In the few studies that exist, differentiated instruction has been found to increase school attendance, although the present study reported no statistically significant impact.

In a detailed case study research by Manship et al. (2016) that investigated the impact of differentiated instruction across several schools in the United States of America, the researchers observed not only improvements in student vocabulary in one school but also enhanced attendance. Enhanced attendance was accompanied by increased parental involvement in schools that implemented differentiated programs. One of the schools that were investigated in the study reported a 90 percent attendance rate and noted that this level of attendance was only reached following the implementation of differentiated instruction. In a Chicago-based school, attendance rates increased to 92 percent following the implementation of the differentiated program (Manship et al., 2016). These findings have been independently confirmed in studies by Santangelo and Tomlinson (2009) as well as McQuarrie and McRae (2010). In Santangelo and Tomlinson's (2009) study, it was found that differentiated instruction was concomitant with high engagement, which in turn, improved attendance. Similarly, McQuarrie and McRae (2010) found that differentiated instruction influenced students to advocate for their own learning, and in doing so, they gained a better understanding of curricular expectations and how to improve their learning. The resultant effect was an enhanced connection between teachers and students which resulted in higher attendance rates for both students and their parents.

### Summary

With regards to the research question about how differentiation is utilized to engage students, there were several common themes identified, such as access points, scaffolding, doable, achievable, and goals. With regards to the research question about how the teaching strategies and environment of a differentiated instruction class differ from that of a traditional class, the findings of this study indicate evidence of the use of a range of teacher instructional strategies such presenting an academic learning environment, having students comfortable asking questions or for assistance, having room for movement during sessions, having individual working space for students and having the learning materials for students to succeed.

With regards to the research question on how differentiated instruction impacts student achievement, the test scores compared before and after differentiated instruction revealed that, on average, students' achievement was better after differentiated instruction and that this improvement was statistically significant. It was found that differentiated instruction consequently made a difference in students' achievement.

With regards to the research question concerning how differentiated instruction shapes student learning behavior, there was no statistically significant difference between student learning behavior in the 2<sup>nd</sup> Period and 3<sup>rd</sup>-Period classes. The research findings however indicated that students in the 2<sup>nd</sup> Period Class demonstrated more individualism in completing their assignments than students in the 3<sup>rd</sup> Period Class. Thus, this study found that teacher-individualized differentiated instruction has certain impacts on student learning behavior. This research also investigated how differentiated instruction impacts student attendance; the findings of this study indicated that differentiated instruction did not have any effect on students' attendance.

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The research findings of this study are confirmed by the existing literature in various respects, although it departs from existing studies in some respects. For example, consistent with previous research, this study found that tiered assessment was a unique feature of the differentiated instruction class when compared to the traditional class. Another practice that separated the differentiated instruction class from the traditional class was that in the former, teachers applied strategies to meet the diverse needs of students. Consistent with previous research, this study also found that presenting students with learning options was a unique feature of teacher instructional strategies in the differentiated instruction class when compared to the traditional class.

The instructional strategy of teachers in the differentiated instruction class additionally consisted of the utilization of problem-solving activities. This finding aligns with existing studies which highlight problem-based learning as a feature of differentiated instruction classes. The practice of using one pedagogy (small group instruction) that was found in this research, contrasts with existing studies that suggest that successful differentiated classes offer varied formats that include small groups, whole-class instruction and individual work. While the study findings deviate from some existing studies, it aligns with others. A characteristic of the learning environment in the differentiated classroom examined in this research was the use of individual working spaces for students. This finding is consistent with existing research concerning learning environments that facilitate differentiation. Overall, the present study found high evidence of differentiated instructional styles and environments, however, other practices associated with differentiated instruction were not detected. The present study found that, on average, students' achievement was better after differentiated instruction than before and the improvement was statistically significant. This finding is consistent with existing studies in the literature.

### **Implications of the Findings**

Overall, this research found that differentiated instruction helped with achievement and engagement but not with attendance or behavior. Teacher instructional strategies regarding differentiated instruction can thus be expected to shape student achievement and engagement through various moderating factors, such as the role of small groups and scaffolding. Therefore, teachers that adopt differentiated instruction strategies in their classroom must devise alternative strategies to promote attendance and desired student behaviors since this research has shown that DI-related instructional styles do not impact these variables.

### **Limitations**

It is important to situate the findings of this research within the context of its limitations. First, the research design of the study is focused on comparison of the outcomes of differentiated instruction in two separate classes. Therefore, because of the limitation of the small sample size, the findings cannot be generalized to larger populations.

Another limitation is pertaining to time constraints which undermined the data collection process. The research was conducted within 10 weeks over Spring Break, which impacted access to the teachers resulting from the holiday. Ideally, a 12-week period would have been suitable for offsetting this disruption and would have enabled a more in-depth data collection process. There is also the possibility that some of the students in the 2nd period worked harder or behaved in a socially desirable way because they were aware that they were assisting me in completing my doctoral studies.

### **Recommendations for Future Research**

Against the backdrop of the research findings of this study, researchers should consider how professional learning for teachers can improve their differentiated learning strategies to

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enhance student outcomes. Future researchers can also interview teachers based on a larger research sample to ascertain their knowledge about differentiated instruction as a precursor to providing differentiated instruction PLCs. Future studies in this related field could be focused on the middle school and high school levels in other academic areas besides reading. In addition, there are curriculums which require teachers to follow a prescript regimen for the sake of continuity across content areas. While there is consistency and fidelity in the language, teachers are limited as to how much the lesson can be embellished in order to meet the needs of different learners. In situations as such, the teacher should be given the autonomy to scaffold the questions in order to reach all level learners. This strategy would also require intense PLCs on how to differentiate questions for all students.

### **Recommendations for Field Practitioners**

This research suggests that additional PLCs are required for administrators. Further, partner administrators who are cognisant of the tenets of differentiated instruction should be paired with cohorts who are unfamiliar with its tenets to encourage learning and provide them with requisite support. More observations, feedback and continuous support from district leaders are also required to ensure that teachers are placed in an optimal position to implement differentiated instruction strategies effectively, maximizing student outcomes.

### **Conclusion**

This research has made an original contribution to the literature by exploring how differentiated instruction impacts students across a range of variables, addressing existing literature gaps. The insights garnered from this research can be useful for educators and can inform curriculum design and instructional strategies in differentiated classrooms to ensure the most positive outcomes for students. While several empirical studies support the findings of the



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present study, it is also challenged by others. The evidence concerning the linkages between differentiated instruction and student engagement is mixed, and there are studies with contrasting findings from this research. That differentiated instruction promotes self-discipline, which was found in this study, has been confirmed by other research. The findings of this study regarding the linkages between differentiated instruction and student attendance largely contrast the existing data; however, as a caveat, existing studies that link differentiated instruction and student attendance are few, meaning that the results of such studies are not necessarily generalizable. Nevertheless, this study constitutes an important reference point that has practical applications in the design of course content.

### References

- Adams, C.M., & Pierce, R.L. (2004). Characteristics of effective teaching. In Traditions and innovations: Teaching at Ball State University. Muncie, IN: Ball State University.  
Retrieved from <https://www.bsu.edu/-/media/www/departamentalcontent>
- Aliakbari, M., & Khales Haghghi, J. (2014). Impact of differentiated instruction strategies and traditional-based instruction on the reading comprehension of Iranian EFL students. *Journal of Research in Applied Linguistics*, 5(1), 109-129.
- Aliakbari, M., & Haghghi, J. K. (2014). On the effectiveness of differentiated instruction in the enhancement of Iranian learners reading comprehension in separate gender education. *Procedia-Social and Behavioral Sciences*, 98, 182-189.
- Aranda, M. R. R., & Zamora, J. L. *Using Differentiated Instruction in Improving the Academic Performance of Students in Filipino Language*. Manila National University.
- Artiles, A. J. (2015). Beyond responsiveness to identity badges: Future research on culture in disability and implications for response to intervention. *Educational Review*, 67(1), 1-22. <http://dx.doi.org/10.1080/00131911.2014.934322>.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Bal, A. P. (2016). The effect of the differentiated teaching approach in the algebraic learning field on students' academic achievements. *Eurasian Journal of Educational Research*, 63, 185-204.
- Bikić, N., Maričić, S. M., & Pikula, M. (2016). The effects of differentiation of content in problem-solving in learning geometry in secondary school. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(11), 2783-2795.
- Brown, H. D. (2007). *Principles of Language Learning and Teaching*. White Plains, N.Y.: Pearson Education.
- Boges, C. E. (2015). *The effects of differentiated instruction on the achievement scores of struggling fourth grade readers. Qualitative case study methodology: Study design and implementation for novice researchers*. Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1174&context=dissertations>
- Brayda, W. C., Boyce, T. D. (2014). So you Really Want to Interview Me?: *Navigating "Sensitive" Qualitative Research Interviewing*. *International Journal of Qualitative Methods*, 13 (1), 318 – 334.
- Bryman, A. (2012). *Social research methods*. Oxford, United Kingdom: Oxford university press.
- Chamberlin, M., & Powers, R. (2010). The promise of differentiated instruction for enhancing the mathematical understandings of college students. *Teaching Mathematics and Its Applications: An International Journal of the IMA*, 29(3), 113-139.
- Chapman, C., King, R., & King, R. M. (2005). *Differentiated assessment strategies: One tool doesn't fit all*. Corwin Press.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Charles Sr., L. F. & Luard, M. L. (2018). Middle school teachers' perception of differentiated instruction on lower third student achievement. *Teacher Education and Curriculum Studies*, 3(3), 20-33. doi: 10.11648/j.tecs.20180303.11
- Christenson, S. L., Sinclair, M. F., Lehr, C. A., & Hurley, C. M. (2000). Promoting successful school completion. In K. Minke, & G. Bear, (Eds), *Preventing school problems - promoting school success* (pp. 211-257). Bethesda, MD: National Association of School Psychologists.
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational Risk and Resilience in African-American Youth: *Context, Self, Action, and Outcomes in School*. *Child Development*, 65(2), 493–506.
- Connor, C. M., Morrison, F. J., Fishman, B., Giuliani, S., Luck, M., Underwood, P. S., ... & Schatschneider, C. (2011). Testing the impact of child characteristics× instruction interactions on third graders' reading comprehension by differentiating literacy instruction. *Reading Research Quarterly*, 46(3), 189-221.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. London: Sage Publications.
- Cusumano, C., & Mueller, J. (2007). How Differentiated Instruction Helps Struggling Students. *Leadership*, 36(4), 8-10.
- Delamont, S., & Jones, A. (2012). *Handbook of qualitative research in education*. Cheltenham, U.K: Edward Elgar.
- DeWalt, K. M., & DeWalt, B. R. (2011). *Participant observation: A guide for fieldworkers*. Lanham, Maryland: Altamira Press, a division of Rowman & Littlefield. Lanham, MD.

## Effect of Differentiated Instruction on Student Engagement in Learning

Dosch, M., & Zidon, M. (2014). "The Course Fit Us": Differentiated instruction in the college classroom. *International Journal of Teaching and Learning in Higher Education*, 26(3), 343-357.

Ferrier, A. M. (2007). *The effects of differentiated instruction on academic achievement in a second-grade science classroom*. Doctoral dissertation, Walden University, Minneapolis, MN.

Finn, J., & Voelkl, K. (1993). *School Characteristics Related to Student Engagement*.

*The Journal of Negro Education*, 62(3), 249-268. doi:10.2307/2295464

Flaherty, S., Hackler, R. (2010). Exploring the Effects of Differentiated Instruction and Cooperative Learning on the Intrinsic Motivational Behaviors of Elementary Reading Students. [Unpublished Action Research Project] (Saint Xavier University)

Gagne, R. M. (1970). *The Conditions of Learning* (2nd ed.). Holt, Rinehart & Winston.

Galligan, L., Huijser, H., & Kimmins, L. (2008). *Evaluating Individual Teaching on the Road to Embedding Academic Skills*. *Journal of Academic Language and Learning*, 2(1835–5106), A23–A38.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gentry, R., Sallie, A. P., & Sanders, C. A. (2013). *Differentiated instructional strategies to accommodate students with varying needs and learning styles*. Retrieved from <https://files.eric.ed.gov/fulltext/ED545458.pdf>

## Effect of Differentiated Instruction on Student Engagement in Learning

Gibson, V. (2008). *Differentiated Instruction: Grouping for Reading Success*. Boston, MA: McGraw-Hill.

The Glossary of Education Reform (2016). Types of Education: Formal, Informal & Non-formal (2019, September 20). In S. Abbott (Ed.), Retrieved from <http://www.passionineducation.com/the-glossary-of-education-reform>

Goddard, Y., Goddard, R. & Kim, M. (2015). School Instructional Climate and Student Achievement: *An Examination of Group Norms for Differentiated Instruction*. *American Journal of Education*, Vol. 122 (1), 111 - 131. <https://doi.org/10.1086/68329>

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24, 105-112.

Guba, E., & Lincoln, Y. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 191-215). Thousand Oaks: Sage Publications.

Hall, T. (2002). *Differentiated instruction*. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved from [http://www.cast.org/publications/ncac/ncac\\_diffinstruc.html](http://www.cast.org/publications/ncac/ncac_diffinstruc.html).

Harrell, M. C., & Bradley, M. A. (2009). *Data collection methods: Semi-structured interviews and focus groups*. Santa Monica, CA: RAND National Defense Research Institute.

Harris, L.R. (2008) *A Phenomenographic Investigation of Teacher Conceptions of Student Engagement in Learning*. *Australian Educational Researcher*. 35, 57–79 (2008).

<https://doi.org/10.1007/BF03216875>.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Heacox, D. (2012). *Differentiating instruction in the regular classroom: How to reach and teach all learners (Updated anniversary edition)*. Minneapolis, MN: Free Spirit Publishing.
- Hesse-Biber, A. N., & Leavy, P. (2006). *The practice of qualitative research*. Thousand Oaks, CA: Sage.
- Hillier, E. (2011). Demystifying differentiation for the elementary music classroom. *Music Educators Journal*, 97(4), 49-54.
- Huijser, H., Kimmins, L., & Galligan, L. (2008). *Evaluating individual teaching on the road to embedding academic skills*. *Journal of Academic Language and Learning*, 2(1), A23-A38.
- Joseph, S., Thomas, M., Simonette, G., & Ramsook, L. (2013). The impact of differentiated instruction in a teacher education setting: Successes and challenges. *International Journal of Higher Education*, 2(3), 28-40.
- Kearney, C. A., & Graczyk, P. (2014). A response to intervention model to promote school attendance and decrease school absenteeism. *The Child & Youth Care Forum*, 43(1), 1-25.
- King-Sears, M. E. (1997). Best academic practices for inclusive classrooms. *Focus on exceptional children*, 29, 1-23.
- Klein, A. (2015). No Child Left Behind: An overview. *Education Week*, 34(27). Retrieved from <http://www.edweek.org/ew/section/multimedia/no-child-leftbehind-overview-definition-summary.html/>.
- Kronberg, R., & York-Barr, J. (1998). Differentiated teaching & learning in heterogeneous classrooms. In *Strategies for meeting the needs of all students*. Minneapolis: University of Minnesota, Institute on Community Integration.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Lanier, M., & Glasson, G. (2014). Investigating strategies for enhancing achievement for urban African American students in middle school science classroom. *Insights on Learning Disabilities, 11*(1), 9.
- Levy, H. M. (2008). Meeting the needs of all students through differentiated instruction: Helping every child reach and exceed standards. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 81*(4), 161-164.
- Little, C. A., McCoach, D. B., & Reis, S. M. (2014). Effects of differentiated reading instruction on student achievement in middle school. *Journal of Advanced Academics, 25*(4), 384–402. <https://doi.org/10.1177/1932202X14549250>
- Mack, L. (2010). The philosophical underpinnings of educational research. *Polyglossia, 19*, 5-11.
- Malacapay, M. C. (2019). Differentiated Instruction in Relation to Pupils' Learning Style. *International Journal of Instruction, 12*(4), 625-638.
- Manship, K., Farber, J., Smith, C., & Drummond, K. (2016). *Case Studies of Schools Implementing Early Elementary Strategies: Preschool through Third Grade Alignment and Differentiated Instruction*. Office of Planning, Evaluation and Policy Development, US Department of Education.
- Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal, 37*(1), 153–184.
- Marzano, R. J., Heflebower, T. & Pickering, D. J (2010). *The Highly Engaged Classroom: The Classroom Strategies Series*. Marzano Research Laboratory.



## Effect of Differentiated Instruction on Student Engagement in Learning

McQuarrie, L. M., & McRae, P. (2010). A provincial perspective on differentiated instruction: The Alberta Initiative for School Improvement (AIS). *Journal of applied research on learning*, 3(4), 1-18.

McTighe, J., & Brown, J. L. (2005). Differentiated instruction and educational standards: Is détente possible?. *Theory Into Practice*, 44(3), 234-244.

Mok, H. N. (2014). Teaching tip: The flipped classroom. *Journal of Information Systems Education*, 25(1), 7.

Morgan, H. (2014). Maximizing student success with differentiated learning. The clearing house, *A Journal of Educational Strategies*, 87(1), 34-38, doi: 10.1080/00098655.2013.832130

Muller, C. M., Hofmann, V., Begert, T., & Cillessen, A. (2018). Peer influence on disruptive classroom behavior depends on teachers' instructional practice. *Journal of Applied Developmental Psychology*. 56, 99-108. Retrieved from <https://doi.org/10.1016/j.appdev.2018.04.001>.

Munro, E. (2011). The Munro Review of Child Protection: Final Report. A child-centred system. Retrieved from [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/175391/Munro-Review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/175391/Munro-Review.pdf).

Munro, J. (2012). The expert knower model as a conceptual tool for understanding gifted and talented knowledge. Occasional Paper (in press). East Melbourne: Centre for Strategic Education.

Nagro, S. A., Hooks, S. D., Fraser, D. W., & Cornelius, K. E. (2018). Whole-group response strategies to promote student engagement in inclusive classrooms. *Teaching Exceptional Children*, 50(4), 243-249.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Pozas, M., Letzel, V., & Schneider, C. (2020). Teachers and differentiated instruction: exploring differentiation practices to address student diversity. *Journal of Research in Special Educational Needs, 20*(3), 217-230.
- Pozas, M., & Schneider, C. (2019). Shedding light on the convoluted terrain of differentiated instruction (DI): Proposal of a DI taxonomy for the heterogeneous classroom. *Open Education Studies, 1*(1), 73-90.
- Price, J. H., & Murnan, J. (2014). Research limitations and the necessity of reporting them. *American Journal of Health Education, 35*, 66-67.
- Rachmawati, M. A., Nu'man, T. M., Widiastara, N., & Wibisono, S. (2016). Differentiated instruction for special needs in inclusive schools: A preliminary study. *Procedia-Social and Behavioral Sciences, 217*, 585-593.
- Ramos, R. K. (2018). *Implementing differentiated instruction by building on multiple ways all students learn*. Retrieved from [https://repository.asu.edu/attachments/201207/content/Ramos\\_asu\\_0010E\\_17893.pdf](https://repository.asu.edu/attachments/201207/content/Ramos_asu_0010E_17893.pdf)
- Reis, S.M., McCoach, D. B., Little, C. A., Muller, L. M. & Kaniskan, R. B (2014). *The Effects of Differentiated Instruction and Enrichment Pedagogy on Reading Achievement in Five Elementary Schools*. American Educational Research Journal April 2011, 48(2):462-501  
DOI: 10.3102/0002831210382891
- Robb, L., & Bucci, P. (2015). Differentiation: Does it work? *Reading Today, 32*(6), 1415.
- Rock, M. L., Gregg, M., Ellis, E., & Gable, R. A. (2008). REACH: A framework for differentiating classroom instruction. *Preventing school failure: Alternative Education for Children and Youth, 52*(2), 31-47.
- Rourke, L., & Anderson, T. (2004). Validity in quantitative content analysis. *Education*

## Effect of Differentiated Instruction on Student Engagement in Learning

*Technology Research and Development*, 52(1), 5–18.

Ruys, I., Defruyt, S., & Rots, I., & Aelterman, A. (2013). Differentiated instruction in teacher education: A case study of congruent teaching. *Teachers and Teaching: Theory and Practice*. 19. 10.1080/13540602.2013.744201.

Santangelo, T., & Tomlinson, C. A. (2009). The application of differentiated instruction in postsecondary environments: Benefits, challenges, and future directions. *International Journal of Teaching and Learning in Higher Education*, 20(3), 307-323.

Santisteban, L. (2014). The Effects of Differentiated Instruction on the Literacy Process of Learners with Interrupted Schooling. *GIST Education and Learning Research Journal*, 9, 31-49.

Smit, R., & Humpert, W. (2012). Differentiated instruction in small schools. *Teaching and teacher education*, 28(8), 1152-1162.

Simmons, R. M. (2015). The impact of differentiated instruction on student reading level throughout the response to intervention model. *Education Masters*. Paper 310.

Subban, P. K., & Round, P. N. (2015). Differentiated instruction at work. Reinforcing the art of classroom observation through the creation of a checklist for beginning and pre-service teachers. *Australian Journal of Teacher Education*, 40(5). Retrieved from <https://ro.ecu.edu.au/cgi/viewcontent.cgi?article=2641&context=ajte>

Tatum, A.W. (2011). Diversity and literacy. In S.J. Samuels & A.E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 424-447). Newark, DE: International Reading Association.

Tieso, C. (2005). The effects of grouping practices and curricular adjustments on achievement. *Journal for the Education of the Gifted*, 29(1), 60-89.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Tomlinson, C. A., & Allan, S. D. (2000). *Leadership for differentiating schools and classrooms*. Ascd.
- Tomlinson, C. A. (2004). Sharing responsibility for differentiating instruction. *Roeper Review*, 26(4), 188.
- Tomlinson, C. A., Callahan, C. M., Tomchin, E. M., Eiss, N., Imbeau, M., & Landrum, M. (1997). Becoming architects of communities of learning: Addressing academic diversity in contemporary classrooms. *Exceptional children*, 63(2), 269-282.
- Tulbure, C. (2011). Differentiated instruction for pre-service teachers: An experimental investigation. *Procedia-Social and Behavioral Sciences*, 30, 448-452.
- Turner, W. D., Solis, O. J., & Kincade, D. H. (2017). Differentiating instruction for large classes in higher education. *International Journal of Teaching and Learning in Higher Education*, 29(3), 490-500.
- Valiandes, S. (2015). Evaluating the impact of differentiated instruction on literacy and reading in mixed ability classrooms: Quality and equity dimensions of education effectiveness. *Studies in Educational Evaluation*, 45, 17-26.
- Van Geel, M., Keuning, T., Frèrejean, J., Dolmans, D., van Merriënboer, J., & Visscher, A. J. (2019). Capturing the complexity of differentiated instruction. *School effectiveness and school improvement*, 30(1), 51-67.
- VanTassel-Baska, J., & Stambaugh, T. (2005). Challenges and possibilities for serving gifted learners in the regular classroom. *Theory Into Practice*, 44(3), 211–217.
- Washington, J. (2018). *The relationship between differentiated instruction and 11th-Grade Students' Academic Performance*. Doctoral Dissertation, Walden University, Minneapolis, MN.

## Effect of Differentiated Instruction on Student Engagement in Learning

Watts-Taffe, S., Laster, B. P., Broach, L., Marinak, B., McDonald Connor, C., & Walker-

Dalhouse, D. (2012). Differentiated instruction: Making informed teacher decisions. *The Reading Teacher*, 66(4), 303-314.

Wesley, S. (2017). *The relationship between differentiated instruction and student behavior in Georgia middle school and high school classrooms*. Doctoral Dissertation, University of Louisiana at Monroe, Monroe, LA.

Willis, J. (2007). *Research-based strategies to ignite student learning: Insights from a neurologist and classroom teacher*. Alexandria, VA: Association for Supervision and Curriculum Development.

Wolfe, P. (2001). *Brain Matters: Translating research into classroom practice*. Alexandria, VA: Association for Supervision and Curriculum Development.

Wormeli, R. (2005). Busting myths about differentiated instruction. *Principal Leadership*, 5(7), 28-33.

Wyse, S. (2011). What is the difference between qualitative research and quantitative research? *Academia*, 1(1), 1-13. Retrieved from <http://www.snapsurveys.com/blog/what-is-the-difference-between-qualitative-research-and-quantitative-research/>

## **Appendix A**

### **Teacher Interview Questionnaire**

#### **General**

1. How do you define the diverse student population in your classroom? What are the diverse student needs?
2. How do you define differentiated instruction?
3. How is differentiated instruction utilized by teachers to engage students?
4. How are students assessed for differentiated instruction?
5. How is differentiated instruction beneficial or detrimental to students?

#### **Student Achievement**

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6. How does differentiated instruction affect student achievement?

**Student Learning Behavior**

7. How does differentiated instruction affect student learning behavior?

**Student Attendance**

8. How does differentiated instruction affect student attendance?

**Appendix B**

**Differentiated Classroom Observation Form**

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Student Learning Behaviors</b>	<b>Often</b>	<b>Sometimes</b>	<b>Minimal</b>	<b>Comments</b>
On task while working alone				
Works effectively in small groups				
Works on their individual skill level				
Uses Self Discipline				

<b>Teacher Instructional Strategy</b>	<b>Often</b>	<b>Sometimes</b>	<b>Minimal</b>	<b>Comments</b>
Utilizes a variety of assessments				
Meeting the diverse needs				
Students presented with learning options				
Utilizing problem solving activities				
Using small groups				
Provides feedback to students and allows for modifications/corrections				

<b>Learning Environment</b>	<b>Often</b>	<b>Sometimes</b>	<b>Minimal</b>	<b>Comments</b>
Presents an academic learning environment				

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Students comfortable asking questions or for assistance				
Room for movement during sessions				
Individual working space for students				
Has the learning materials for students to succeed				

**Appendix C**

**Student Motivation Survey Self-Assessment**

(Ferrier, 2007)

This survey is designed to help you identify your student motivation quotient on a scale of 1-100. You will rate all of the statements on a scale of 1-5, with 5 being highest. Take your time and give honest answers.

I am very well organized.

Less True - 1 2 3 4 5 - More True

I have good work habits and study habits.

Less True - 1 2 3 4 5 - More True

I have never had a violent outburst or gotten into a fight at school.

Less True - 1 2 3 4 5 - More True



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I feel I am working up to my full potential.

Less True - 1 2 3 4 5 - More True

I don't let my friends distract me from doing my schoolwork and homework.

Less True - 1 2 3 4 5 - More True

I always do my homework without my parents or teachers having to remind me.

Less True - 1 2 3 4 5 - More True

I like to put a lot of thought and effort into my work.

Less True - 1 2 3 4 5 - More True

I have never repeated a grade in middle or high school (grades 6-12).

Less True - 1 2 3 4 5 - More True

I would rather be seen as 'school smart' than 'street smart.'

Less True - 1 2 3 4 5 - More True

I wake up in the morning feeling refreshed and ready for school.

Less True - 1 2 3 4 5 - More True

I rarely complain about school.

Less True - 1 2 3 4 5 - More True

I work hard in school even when I don't like the teacher.

Less True - 1 2 3 4 5 - More True

I have a positive attitude and positive beliefs about school.

Less True - 1 2 3 4 5 - More True

In the past two years, I have never been suspended from school.

Less True - 1 2 3 4 5 - More True

I have never been expelled from school for my behavior.

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Less True - 1 2 3 4 5 - More True

On my last report card, I had A's and B's in all of my classes.

Less True - 1 2 3 4 5 - More True

Over the past two years, I have never attended mandatory summer school for a failing grade.

Less True - 1 2 3 4 5 - More True

Appendix D

Student Assent Form

Research Study Assent Form

**Name of Minor:** \_\_\_\_\_

**Parental Permission on File:**  Yes  No\*\*

**Study Title:** “What is the Effect of Differentiated Instruction on Student Engagement in Learning?”

**Researcher:**

Charlotte R. Lester

[lesterc@clarke.k12.ga.us](mailto:lesterc@clarke.k12.ga.us)

(706) 548-7208 ext. 25202

My name is Charlotte R. Lester and I am a doctoral at Kennesaw State University. I am in the dissertation phase of my research and am excited about conducting my work at Burney Harris Lyons Middle School. I am inviting you to be in a research study about differentiated instruction and how it increases student engagement.

## Effect of Differentiated Instruction on Student Engagement in Learning

- Your parent knows we are going to ask you to be in this research study, but you get to make the final choice. It is up to you. If you decide to be in the study, we will ask you to select assignments that you will be working on independently. Everyone will have a choice as to what they want to complete.
- If you choose to participate, you will have to complete a short survey before the research begins, take a pre and posttest, and I will observe your class to collect data on how engaged you are, or how well you participate during class.
- If you take part in this research study, you might benefit from being able to select assignments based of your ability which should increase your test scores and overall achievement in class.
- I don't think that there are any risk dangers if you decide to participate, but if someone accesses your data (attendance, test scores, surveys, behavior) you will be identified by numbers, not names. So, no one will know who you are or any personal information about you.
  
- If you feel uncomfortable about questions in the survey, please let me know and you can stop. You are not receiving a grade and there are no right or wrong answers.
  
- Everything you say and do will be private. We won't tell your parents or anyone else what you say or do while you are taking part in the study. When we tell other people about what we learned in the study, we won't tell them your name or the name of anyone else who took part in the research study.
  
- This study is strictly voluntary; you don't have to be participate. It is up to you. You can say no now or you can change your mind later. No one will be upset if you change your mind.
  
- You can ask us questions at anytime and you can talk to your parent any time you want. We will give you a copy of this form that you can keep. Here is the name and phone number of someone you can talk to if you have questions about the study:

Name: Charlotte Lester Phone number 706-548-7208

- Do you have any questions now that I can answer for you?

IF YOU WANT TO BE IN THE STUDY, SIGN OR PRINT YOUR NAME ON THE LINE BELOW:

\_\_\_\_\_

Signature of Minor

\_\_\_\_\_

Date

\_\_\_\_\_

Signature of Researcher obtaining assent

\_\_\_\_\_

Date

## Appendix E

### Teacher Consent Form

#### Teacher Consent for Participation in Research

My name is Charlotte Lester and I am a doctoral student at Kennesaw State University. I am conducting a study on the effectiveness of differentiated instruction and how it impacts engagement which will lead to higher student achievement. Your participation in this study will help me collect the data that I need in order to successfully validate my findings or disprove my theory.

This is strictly voluntary. You will not be penalized if you choose not to participate. There is no compensation of any kind if you choose to take part in this study. It is for the betterment of the students and no other motives are implied. If you agree to partake, please read and sign below. Thank you for your consideration.

I am being asked to participate in a qualitative study that will be conducted in my school. This study will focus on ELA students and professional learning.

1. I understand that I am volunteering and will not be compensated for any participation on my part. I may decide at any time that I do not want to continue in that capacity and may discontinue at any time without penalty.
2. When being interviewed some of the questions will be thought provoking, but if the questions make me feel uncomfortable, I do not have to respond.

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3. There will be an interview process prior to the professional learning sessions. The interview will take no longer than 40 minutes. I will also have to complete a pre and post survey in reference to the PL sessions. This will take no longer than 15 minutes. Again, if there are any questions or responses that make me feel uncomfortable, I do not have to respond.

4. My name will not be mentioned in any report and my confidentiality will continue protected throughout this research.

5. I will be interviewed by the researcher only. No one else will be allowed to attend my interview session.

6. The Institutional Review Board (IRB) has approved this student and I have the right to contact them at any point if I have questions or concerns.

7. I will receive a copy of this consent form.

8. I have read, understand and agree to participate in this study.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Date

For further information, please contact:

Charlotte Lester

[Lesterc@greene.k12.ga.us](mailto:Lesterc@greene.k12.ga.us) or 706-548-7208

Appendix F

Parent Assent Form

Charlotte R. Lester  
[lesterc@clarke.k12.ga.us](mailto:lesterc@clarke.k12.ga.us)  
(706) 548-7208, Ext 25202

Kennesaw State University Doctoral Student  
Mixed Method Research Study

This informed consent form is for Burney Harris Lyons students who are participating in the research titled “What is the Effect of Differentiated Instruction on Student Engagement in Learning?”

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you agree that your child may participate)

You will be given a copy of the full Informed Consent Form

**Part I: Information Sheet**

My name is Charlotte R. Lester and I am a doctoral at Kennesaw State University. I am in the dissertation phase of my research and am excited about conducting my work at Burney Harris Lyons Middle School. My research will hopefully enhance the teachers' skills so that they are more prepared to provide a meaningful and rigorous instruction so that your child is academically prepared to enter college or the workforce. Before I can engage your child in this study, I must first have your permission. After you continue to read more about my research, if you agree to allow your child to participate I will then ask your child if he/she would like to participate. Both of you have to agree before I can begin my research. After reading this document in its entirety, if there is anything you do not understand, please feel free to contact me.

### **Purpose**

The purpose of this study is to show how differentiating instruction will help students become more engaged during class. Classroom engagement will also boost student achievement. Your child was selected because he/she is a student in the classrooms in which I will be making my observations. You, or your child, are not obligated to participate in this study – this is strictly voluntary. There is no pressure or penalty if he/she chooses not to take part.

### **Procedure**

The students will be interviewed. It should take approximately 30 minutes. The questions that will be asked are attached to this letter. If he/she does not wish to answer any of the questions during the interview, they may say so and I will continue with the remainder of the questions. The interview will take place in the classroom during Extended Learning Time, lunch or after school. No one else will be present unless the child makes that request. The information will be confidential and no one else will have access to it.

After the interview has been completed, he/she will be asked to answer survey questions the following week which I will provide and collect after it has been completed. It should take approximately 20 minutes to complete the survey. The survey is designed to gauge the motivational level of the student before the study. The same format that was used during the interview will be used while he/she is completing the survey and it will be attached as well. In addition, students will be given a pre-test before the unit is taught and a post-test at the end of the unit to determine whether or not the strategy was effective. The pre and post tests will be comprised of reading passages, comprehension questions and vocabulary words.

Next, I will make class room observations throughout the study. The observation notes will be recorded on a document – no audio or visual methods will be used. The instructional flow will not be disturbed at any point during my observations. I will monitor and measure student engagement and document any changes (increase/decrease in participation) if any occur.

There will not be any kind of immediate or direct monetary or tangible benefit to you or your child other than an increase in engagement. This study will help teachers improve

their instructional practice and as a result, increase student achievement.

Risks or Discomforts

There will not be any risks or discomforts that will bring any type of psychological or physical harm to your child.

Confidentiality

We will take steps to protect your privacy. Be assured that the information will not be used or distributed for future research. In addition, all information will be destroyed after the research has been completed.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, irb@kennesaw.edu.

Lastly, your child has the right to withdraw at any time during the research. Just notify me at the email address listed below. Thank you for your consideration.

---

**Certificate of Consent**

If you agree to participate in this research study, please sign below:

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—

Signature of Participant or Authorized Representative, Date

---

—

Signature of Investigator, Date

PLEASE SIGN BOTH COPIES OF THIS FORM, KEEP ONE AND RETURN THE OTHER TO THE INVESTIGATOR



Appendix G

District Approval Letter

February 14, 2022

To the Kennesaw State University Institutional Review Board:

The Clarke County School District (CCSD) enthusiastically approves Ms. Charlotte Lester's research proposal in completion of his dissertation. Ms. Lester will work with Burney-Harris-Lyons Middle School, which comprise about 700 students in grades 6 through 8. CCSD is responsible for and affiliated with this middle school. Ms. Lester is approved to study differentiated learning in ELA classrooms. Ms. Lester is sharing informed consent, notifying the participants of research ethics, and agrees to not share any personally identifiable information on participants. The CCSD Office of Data and Research approves Ms. Lester's protocols to protect privacy and maintain the integrity of research on teachers.

On behalf of CCSD, we look forward to working with Ms. Lester on this research project, and eagerly await the results to further guide our work.

Sincerely,

A handwritten signature in black ink, appearing to read "J.D. Barlament". The signature is fluid and cursive, with the first name "James" and last name "Barlament" clearly visible.

James Barlament

Director of Data and Research

Clarke County School District