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Differentiated Instruction and Improving Elementary Student Learning

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Abstract

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MS, Walden University, 2016

BMus, University of Tampa, 2010

Project Study Submitted in Partial Fulfillment

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Abstract

Administration and ministers of elementary schools located in the target district in the Caribbean reported that some elementary teachers were inconsistently implementing differentiated instruction (DI) in their practice. Based on the identified problem, it was unclear which specific strategies of DI were causing teachers to experience barriers or challenges during the process of implementation. The purpose of this basic qualitative study was to explore teacher perceptions in one district about their implementation of the conceptual framework, Weimer's learner-centered teaching theory DI model, in their classroom instruction. Data from schools in one elementary school district in the Beach School District were collected through virtual interviews with 15 teacher participants who had 5 to 10 years of teaching experience for Grades 5 to 6. Data were analyzed with open coding using the RADaR model of analysis. Results indicated that, when teachers use limited and repetitive DI strategies, their use of the DI model in their practice is inconsistent. In addition, teachers indicated they would benefit from some additional training on alternative DI strategies as well as how to effectively differentiate their instruction consistently. A 3-day professional development series was designed to educate elementary teachers on the model of DI and learner-centered instructional strategies to increase their consistent use in the classroom. The results of this project study may contribute to positive social change by providing classroom teachers with additional resources and training to improve the implementation of DI in the classroom and enhance the learning experiences of students.

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Dedication

I dedicate this dissertation to my family. To my parents Karsten and Marcia Scott, who have been my biggest supporters and the motivating force to finish this doctorate. This journey would not be possible, and indeed, I would not have reached this point without your love, support, and steadfast encouragement. To my husband, Jake, I will never be able to adequately express my gratitude, love, and appreciation for your support and understanding. To Kristiana Ysabella and Rallie Matteo, my children, who have patiently been waiting for me to "be a doctor" so we could spend more time playing together. I hope that from watching me go through this process, you have gained an understanding of the importance of following your dreams, working hard, and striving to be your best. I cannot think of anything more difficult than the times I spent working on this doctorate when you wanted nothing more than for me to give you my undivided attention. My hope is that the sacrifices that have been made for this doctorate have reinforced the importance of hard work, perseverance, and service to others. There is no role in my life that I am so proud of than being your mommy. "I love you more than you will ever know!" While he was not able to be here to support me during my graduate education and project study writing, I especially dedicate this work to my late brother, Raoul Muhammed Scott, for showing me that giving up is not an option and perseverance is essential to achieving our true greatness. And finally, to my beloved Nannie, Aleita Scott, who has been there for every pinnacle, I wish you could have been here for this major milestone in my life. You were an ever-present encouragement, positive example, and matriarch that demonstrated that hard work is the key to any form of success with the Lord leading the way. I know that you will always be proud of my accomplishments.

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I would first like to thank my capstone committee members for their guidance and support throughout this journey. Dr. Christopher Cale, my committee chair and mentor, has continuously guided this process through formal instruction, lengthy conversations, and explanations, patience, understanding, but most of all, his never-ceasing encouragement. Both Drs. Cale and Jazzar have spent time guiding me through processes, editing my work, and providing feedback, repeatedly. Thank you two for always reassuring me in both my ideas and writing, as well as providing me exceptional examples through your research, writings, and publications. Dr. Cale, thank you for always responding quickly, sharing your dissertation writing experiences, and making me laugh when it was most needed. I appreciate your thoughtful and essential contributions to this project, as your instruction, ideas, and questions regarding my work have aided me tremendously in better understanding both the history of higher education as well as the research process.

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Section 1: The Problem

The Local Problem

The problem in this project study was that some elementary school teachers were inconsistently using differentiated instruction (DI) as based on Weimer's learner centered teaching theory (LCTT). At the study site, all elementary teachers are expected to differentiate their instruction and cater to their lessons with the learner at the center in Weimer's (2002) LCTT model (Ministry of Education, 2015). According to the *Education Data Report* (Ministry of Education, 2017), the California Achievement Test (CAT) assessments predicted that by the end of Grade 6, 79% of students should achieve a Level 4 or higher in English and 76% of students should achieve a Level 4 in mathematics. However, results from the latest CAT test depicted actual gains in English as 63%, 16% lower than predicted, and 48% in mathematics, 28% lower. This data illustrates that the Grade 6 students are underachieving relative to the CAT estimates, illustrating a shallow level of learning and ineffective strategies used through teacher instruction (Ministry of Education, 2017). Based on communication that occurred in staff meetings and recorded in meeting minutes, it has been stated that most of the teachers in the elementary schools are inconsistently using differentiated instructional methods, which signals a lack of catering to all students' learning needs . The problem I addressed in this study was elementary teachers' inconsistent use of Weimer's (2002) LCTT differentiated instructional model in Grade 6 classrooms at the Beach School District.

Michael et al. (2018) reported in their research that teachers' instructional methods play a significant role in improving learning and that DI, among these methods,

uniquely supports both high-ability students and those with a disability. DI provides students with options and means where they can take on more of the responsibility for their own learning. Goh et al. (2017) reported in their research that some students fail to tie knowledge and skills taught through instructional methods such as DI. Recent literature reports the challenges faced by teachers as they attempt to employ DI through the exploration of their perceptions of the method of differentiation (Andrietti & Su, 2019; Guay et al. 2017). An analysis of local school site data suggests that some teachers in the district elementary schools are using DI inconsistently (Office of Education Standards, 2019). In this study I explored a gap in practice in the Beach School District where teachers are inconsistently using DI in their classroom instruction.

Rationale

At the Beach School District, it has been noted by the administration in staff meetings and by the Ministry of Education that teachers' perceptions of DI affects their implementation and use of the model. The administration of the Beach School District had concerns that teacher perceptions of the model of DI may cause a barrier to their implementation in the classroom and have an impact on student performance on the CAT. Parents and teachers at the Beach School District have voiced their concerns at various PTA meetings about students' performances on the CAT. The data from the CAT were used to project students' future learning levels and determine their placements into A or B set classes as they continue to high school. To address this, the Ministry of Education has offered numerous monthly professional development (PD) sessions to assist and inform teachers on strategies to enhance students' learning by using a student-centered

approach and interactive activities via technology. The literature suggested that consistent implementation of the model of DI has proven to promote student learning and performance on district tests (Aksit et al., 2016). De Neve et al. (2015) indicated in their research that when teachers are provided with additional PD support, their perception of the model of DI is improved as well as the implementation in their practice. Prast et al. (2018) support Goddard and Minjung's (2018) research claims of how proper support enhances both teacher perception and implementation of the model of DI. Adequate and specific PD provides teachers with the necessary training and skills to enhance teachers' confidence to implement the DI model consistently. A lack of confidence in consistently implementing the model of DI highlights the need to understand how teacher perception determines their consistent implementation and use of the model of DI.

This study afforded teachers a prospect to cogitate and convey their experiences and beliefs in detail to provide data to address the research problem and study focus. This study may provide an increased understanding of why and how teachers are using DI and how they perceive its use in contributing to student learning. Because DI is a process by which educators reflect upon how responsive students are to teaching and learning, the information gathered will assist in answering the research question, as well as addressing the local gap in practice. This study was focused on how teachers use and implement the differentiated instructional component of Weimer's (2002) LCTT model. The purpose of this project study was to explore teacher perceptions in Beach School District about their implementation of Weimer's LCTT differentiated instructional model in their classroom instruction.

Justification for the Problem Choice

The Ministry of Education (2015) reported that student achievement has increased between 17% to 28% in English and mathematics over the past 5 years. While the achievement gains illustrate some improvement in student learning, the numbers are still way below 50%. These percentages illustrate that teachers in elementary schools may inconsistently be catering to the needs of all students because the achievement gains over the past 5 years have been below average. Although DI is a widely recommended approach, the process of implementation is complex and not without difficulty (Cukurova et al., 2018). Guay and Bureau (2018) claimed that due to the diversity across schools and students, it is quite difficult to calculate differentiation effects on student achievement. Altintas and Ozdemir (2015) stated in their research that although using a differentiated instructional approach is expected to yield positive achievement results for students, further investigation is needed to confirm this assumption. Altintas and Ozdemir (2015) continued to assert in a more recent study that the differentiated instructional approach lacks empirical support, which provides further justification for my study.

Definition of Terms

Differentiated instruction (DI): A philosophy of teaching founded on the premise that students learn best when accommodations are made based on their readiness levels, interests, and learning profiles (Tomlinson et al., 2003, p. 263).

California achievement test: A standardized test normed nationally in 1986 by Vygotsky that measures achievement in the areas of reading, language arts, and math (Koul et al., 2017).

Learner-centered teaching theory (LCTT): An approach to teaching that focuses on the learners and their development rather than on the transmission of content; it addresses the balance of power in teaching and learning, moves toward learners actively constructing their knowledge, and puts the responsibility for learning on the learners (Weimer, 2002).

Significance of the Study

In this study, I investigated the local problem by exploring why Grade 6 elementary teachers in the Beach School District are inconsistently implementing Weimer's (2002) differentiated instructional model in their classroom instruction. Inconsistent use of differentiation can affect the learning process for some students, especially when their needs are not being catered for (Valiandes, 2015). The results of this study may provide insights into elementary teachers' use of DI in the classroom. According to Weimer (2013), when the DI method is used in teachers' instruction, students' learning is enhanced through the provision of a range of different paths to obtaining content and demonstrating their knowledge of new information and processing acquired knowledge, which involves what they do with the knowledge gained to make sense of it or show what they have learned through the creation of teaching materials and appropriate forms of assessment that assist students with learning and cater to all their learning needs. The data and results from this study support the professional education practice as educational administrators can provide teachers with access to the results. The results of this study guide the successful implementation of the model of DI in teachers'

practices to consistently ensure that every student's learning needs are met to promote their continual growth.

The results of this study may promote social change in several ways. Students at the study cite in grade 6 would have a more enhanced learning experience as their needs are catered for. Moreover, the potential findings from this study were necessary to determine why teachers are inconsistently implementing Weimer's (2002) differentiated instructional model and ultimately to provide a guide for adapting future classroom environments and designing lessons through which all students' learning needs are met. The potential social change that is expected from the results of this study was that there will be an additional 20% to 30% increase in students' attainment in the next CAT assessment bringing the achievement increase to 58% as compared to the past 5 years.

Research Question

In this study, I sought to discover information relevant to Grade 6 elementary teachers and their use of DI. The model of DI, when executed consistently, promotes learning for all students as their needs are catered for. It is evident in the literature that teacher perception may play a role in determining teachers' consistent use of the model. For this study, the following research question was used to discover the reason behind the inconsistent use of the model by elementary teachers.

RQ: What are teachers' perceptions about why they are inconsistently implementing Weimer's differentiated instructional model?

Review of the Literature

Conceptual Framework: Learner-Centered Teaching Theory

Phenomenon That Grounds the Study

My basic qualitative study was grounded in the conceptual framework of Weimer's (2002) learner-centered teaching theory (LCTT) of DI. Weimer's theory focused on the learner and their development rather than the transmission of content. This model addressed the balance of power in the process of teaching and learning, where the teacher becomes a facilitator. The learner is viewed as an active agent who brings their knowledge, experience, education, and ideas to the learning process, which plays an integral role in their ability to take in new information and learn (Weimer, 2002).

The LCTT (Weimer, 2002) was initially introduced by Jean Jacque Rousseau in the mid-1700s based on his perception that educators should begin their instruction with the student's capability and interest in learning (Jackson, 2017). Weimer (2013) built upon Rousseau's theory by emphasizing that students' learning process becomes more meaningful when they are given the power to select topics that are interesting to them. Placing students at the center of the learning process, as the LCTT model suggests, gives students the platform to control their learning, and through this process, students become more engaged, and they develop problem-solving and critical thinking skills (Gilboy et al., 2015).

Need for the Study. An analysis of local school site data illustrated that 62% of the teaching faculty at the Beach School District elementary schools are inconsistently using DI (Office of Education Standards, 2019). According to the Education Data Report

(Ministry of Education, 2017), the results of the latest CAT scores were 16%-28% lower than predicted. The data shown in the CAT score analysis suggested that students are experiencing shallow learning levels due to ineffective differentiated instructional methods employed by teachers (Ministry of Education, 2017). Differentiated instructional methods provide students with specific supports that are necessary to help them learn and succeed academically. This study was necessary to discover why teachers are inconsistently using DI at the Beach School District elementary schools to remediate the problem so that all students' needs are met, and they are provided with opportunities to take responsibility for their learning process and succeed academically.

Logical Connections. Logical connections among the key elements for Weimer's LCTT framework (Weimer, 2002) emphasize the need to understand and identify the specific challenges and concerns that lead to elementary teachers inconsistently implementing the LCTT differentiated instructional model, which was the purpose of the study. Weimer concluded that students need to be stimulated and engaged in the learning process for learning to occur and that using the LCTT framework assists with giving students the ability to take ownership of their learning while developing appropriate skills (Agrahari, 2016). However, elementary and secondary schools need to ensure that all teachers adapt to a learner-centered approach so that the transition from elementary to secondary school can be smooth, and student learning can be effectively enhanced.

In the LCTT model of DI, the teacher takes on a more passive role, and students become more engaged in their process of learning. Activities developed by teachers assist students in developing their problem-solving, decision making, teamwork, critical

thinking, and presentation skills, which impart the ability to adapt to a constantly changing real-world environment. Cukurova et al. (2018) and Dennick (2016) agreed that when both elementary and secondary teachers step out of the spotlight and give students the stage as in the LCTT framework, the student learning process is enhanced.

Relations Between the Framework, Study Approach, Research Question, and Data Analysis. The LCTT model by Weimer (2002) was selected for this study because this study was focused on the need to identify the reasons why teachers are inconsistently implementing Weimer's LCTT differentiated model (Weimer, 2002). In this study, the LCTT framework also assisted in the data analysis concerning teacher's inconsistent use of DI in the classroom. Weimer's LCTT framework is related to a qualitative approach due to the in-depth data that is generated during data collection (Moser & Korstjens, 2018.). The LCTT framework served to guide the process of data collection and analysis to explain and validate how teacher perceptions of the DI model impact their implementation and use of DI in their daily instruction. The LCTT model was connected to the selected data collection instruments and procedures of data analysis. The created interview questions and researcher journal protocol are in alignment with the framework and intent of this study. The design of each data collection instruction assisted in highlighting the specific challenges and concerns that affect teachers' inconsistent use of Weimer's LCTT differentiated instructional model. The five features of Weimer's (2002) LCTT differentiated instructional model provided a framework from which to explore the study's problem and purpose. Weimer's LCTT conceptual framework was relevant to this qualitative study as it provides valuable information and strategies that may assist

teachers with differentiated instructional methods in the classroom. The research question in this study focused on identifying why Grade 6 elementary teachers are inconsistently using DI. Answering the research question will reveal if Grade 6 elementary teachers and their students' perceptions of DI determine the model's success and effectiveness in assisting students with becoming independent learners.

Review of the Broader Problem

This literature review involved reviewing over 75 peer-reviewed journal articles and books that focused on or were related to DI, learner-centered teaching, LCTT, elementary students, and differentiated instructional strategies. The search terms, phrases, and keywords I used individually or in combinations to discover peer-reviewed research conducted in the last 5 years included: *the inconsistent use of DI in elementary classrooms*, *elementary teachers' perception of DI, effects of the inconsistent use of DI, benefits of differentiated instruction, learner-centered teaching theory, learner-centered teaching, learner-centered teaching theory, and DI, advantages of DI, advantages of learner-centered teaching theory, implementation of DI in the elementary classroom*, and *the barriers to implementing DI.*

The internet-based search engines and databases I utilized for conducting my scholarly research included: Academic Search Complete, Education Resource Information Center (ERIC), and Google Scholar. I used a Microsoft Excel spreadsheet to organize the key elements such as subjects, methodologies, and findings as well as other important aspects of each research study to assist with the identification of similarities across articles. Data saturation refers to the quality and quantity of information in a

qualitative research study (Faulkner & Trotter, 2017). Fusch et al. (2018) described that when researchers are unable to discover new themes or ideas from the collected data, this is known as data saturation; in other words, there is redundancy. After reviewing the data collected and compiled in the Excel spreadsheet, I was able to achieve data saturation because the same information, themes, and ideas were constantly being identified during the scholarly research.

In the subsection that follows, I (a) present information that outlines the historical background of learning and the model of DI, (b) describe the model of DI, (c) discuss theoretical foundations of DI, (d) provide the purpose of DI, (e) describe teaching and knowledge in DI, and (f) detail the components essential for the effective implementation of the differentiated instructional model.

Differentiated Instruction

The model of DI allows teachers to cater to diverse student populations and ensures that all their needs are met. Current research demonstrates the importance of using DI consistently (Moosa & Shareefa, 2019), and recent research illustrates that this method positively affects students' educational attainment (Faber et al., 2018). Goddard and Minjung (2018) emphasized in their research that the model of DI consists of philosophies that build upon students' learning, such as (a) every student has areas of strength, and areas that need support; (b) students are unique beings, and so their brains are quite distinctive; (c) learning has no age limit; and (d) every student can learn, however, each may learn differently and at different times. Teachers are recommended to select differentiated instructional strategies that create connections for students

(Cukurova et al.,2018). Using the model of DI, teachers critically analyze their students' needs, consider what students would like to learn about, and design assessable tasks that align with their learning abilities as they develop curriculums and approaches to learning (Wan, 2017).

In today's classrooms, the learning process of students is influenced by differences in their culture, language spoken, background, level of education, learning ability, readiness, and interest. According to Altintas and Ozdemir (2015), for teachers to ensure learning, students must be appropriately challenged. Challenges that seem too difficult or that fail to stimulate the learner will cause students to give up due to frustration, lack of motivation, or boredom. When teachers reflect on their practice, they can take into consideration that each student learns differently, which means that their instruction or practice must reflect catering to their students' needs. According to Valiandes (2015), DI is an integral asset to educational systems worldwide because this model provides specialized teaching that better meets students' various learning needs.

The model of DI takes into consideration the individual learner's needs, topics that are of interest to the learner, and how ready the student is to learn, and shadows some of the most significant theorists in educational research (Suprayogi et al., 2017). In their research, Suprayogi et al. (2017) explained that the model of DI required teachers to take a more dynamic and consequential approach when developing their instruction. Coubergs et al. (2017) provided a detailed description of the model of DI that illustrated how teachers could ensure that all students' learning needs are met so that each student can be academically successful. Coubergs et al. continued to state that when teachers incorporate

DI in their practice, students can accomplish set standards. When teachers are aware of students' differences or learning needs and use the differentiated instructional model, they plan for students to experience a deeper understanding of content, focus on the goals that are to be attained, and provide the appropriate teaching practices to enhance their achievement (Faber et al., 2018).

Coubergs et al. (2017) recognized that DI utilizes students' personal history or experience to promote or propel their learning. In addition to prior knowledge being a foundational element to supporting a differentiated instructional atmosphere, the socioemotional constructs of students can also affect their ability to learn (Coubergs et al., 2017). Tomlinson (2014) concluded that when teachers design or select the curriculum from which they will teach, its development should promote students' comprehension of the material or content's intent and be intriguing and relevant to their interests. Students' learning experience is enriched in a differentiated atmosphere as they bring what they already know to the environment. Tomlinson (2014) stated effective learning begins where the learner is currently engaged, and activities that they participate in promote their academic growth moderately. One method to generate students' understanding of content is to utilize all-encompassing classifications, perceptions, and influential philosophies. Teachers need to design various activities that allow students to make connections between prior and newly acquired knowledge, using previous knowledge to build on with new information. To achieve this connection between prior and new knowledge, teachers must first distinguish essential perceptions, ideologies, and proficiencies of the subject they teach and develop clear understandings of each student's

needs. Guay and Bureau (2018) evidenced in their study that using the key components of DI in the classroom assists students with making connections between what they already know and new information that is learned; however, teachers must also consider students' interests, emotions, contexts, and pattern making. The model of DI affords teachers the ability to scrutinize assessments and reflections of their practice to make necessary adjustments to ensure all learners' needs are met (Coubergs et al., 2017).

Historical Background of Learning and Differentiated Instruction

The model of DI dates back to the 1600s when single-room schoolhouses were the staple in education (Dack, 2019). This setting placed the responsibility of student learning for a wide range of grades upon one teacher. With so much variation in age and ability, struggling students could not keep up with their peers, causing drop-out rates to rise as students chose to join the workforce. To promote retention and enable students to work at their own pace and be successful in their education, Preston Search started the movement of catering learning to students' abilities and needs (Abety & Zayas, 2019). According to Abety and Zayas (2019), in late 1912, achievement and intelligent tests identified existing gaps in children's abilities, and educators began to modify the content of their teaching practice to fit students' readiness and abilities. In 1975, Congress introduced and passed the Education for All Handicapped Children Act that ensured students with disabilities equal access to free and appropriate public education (Bicehouse & Faieta, 2017). Individual Education Programs (IEPs) began to surface and served as guidance for teachers as they differentiated their instruction for students identified with needs in the general and special education classrooms. In the history of

DI, the manner a student acquires knowledge or learns, the functioning of their brain in response to the methods used in the classroom, and their ability to practice critical thinking each play a role in determining the effectiveness and efficiency of the model of DI. Each of these factors is discussed in the subsection that follows.

Knowledge Acquisition

When students' needs are not accommodated and teachers are inconsistently using DI, a barrier forms that may prevent students from learning. The ability to learn is dependent on an individual's experiences, skills previously acquired, and ability to problem-solve and think critically. According to Bruner (1961), individuals can solve problems and discover the consequences of their actions by reflecting on past and immediate experiences. In this manner, they construct their understanding. Bruner further described the process of learning as being active, meaning a change is required in the learner; this is achievable through engaging activities and reflection. In addition to knowledge acquisition, students' level of engagement plays a part in determining how much knowledge is gained (Bruner, 1961). Despite this, teachers can assist students in acquiring knowledge by incorporating relevant and engaging topics in their teaching practice (Altintas & Ozdemir, 2015). For learning to occur, teachers need to consistently use the model of differentiation to meet the needs of every student.

The Brain's Function in Education

The brain is a complex organ that differs in each individual, and its function is connected to an individual's abilities. Again, if teachers are not considering students' learning needs or catering for varying abilities by tiering activities and differentiating

their instruction consistently, some students cannot make connections or build experiences to create new knowledge. Based on current research by theorists, every individual student can acquire knowledge; however, the actual acquisition of knowledge depends on teachers' methods and topic relevance (Masson & Sarrasin, 2015). Cukurova et al. (2018) described the mind as being a "meaning-maker" that firstly absorbs knowledge or experiences and then allocates meaning to it during processing. They posed the query, "How can what is being taught in schools be considered meaningful when there are so many different combinations of personalities, cultures, and types of students?" (Cukurova et al., 2018, p.45). Take, for example, when students can apply the mathematical strategies learned in school to their daily tasks, such as in their finances. It is at this moment that what students have learned in math is applied to a real-life situation. Students can gain knowledge from engaging activities that generate direct relationships between an individuals' experiences so that meanings can be created; however, researchers advised teachers to further educate themselves on how students learn best through research on the function of the brain in education (Masson & Sarrasin, 2015).

Memory and learning go hand in hand when teachers create classroom environments that are conducive and brain-compatible (Van Niekerk & Webb, 2016). Van Niekerk and Webb (2016) expressed the development of brain compatibility as the process of "building upon prior knowledge and learning through designed lessons and assessments for students" (p. 24). When teachers are aware of the brain's function, they can create and implement differentiated instructional methods that take advantage of the

brain's inherent capacities so that student learning is greatly supported (Aksitet al., 2016). Thus, teachers must provide students with activities that help students to use their prior knowledge to apply to and learn new information.

Critical Thinking

Inconsistency with using the model of DI in the classroom prevents teachers from modifying activities that both cater to students' learning needs and fail to provide tasks that promote their development of critical thinking skills. The ability to think critically makes an individual capable of tackling new challenges and completing them well. Critical thinking skills enable an individual to understand logical connections between ideas and to identify, construct, and evaluate arguments (Valiandes, 2015). However, when teachers incorporate activities in their practice that develop students' critical thinking abilities or skills, the process of learning becomes more meaningful and relevant as they can practice analyzing various situations, identifying major connections, and learning how to create solutions to problems. While critical thinking activities help students to understand or make sense of a phenomenon, the process of learning can be enhanced further by ensuring that topics covered include those that students are interested in (Cukurova et al., 2018). When teachers consider students' interests and involvement in the process of learning, it shows their ability to model how to think about what students want to learn, supporting their learning with stimulating experiences critically and making the resources available to promote their academic success (Dennick, 2016). Nonetheless, while considering that students' interests enhance their academic success, employing the model of DI allows teachers to be receptive to classroom diversity and to

provide multiple ways for students to demonstrate their understanding, thereby promoting maximum learning and enhanced experiences.

Theoretical Foundations of Differentiated Instruction

The constructivist theory is an integral cornerstone necessary for the full comprehension of the method of DI. The constructivist theory grounds DI by being built off the idea that each person constructs their own body of knowledge in interaction with their environment based on and combined with prior knowledge and dexterities; this is due to both the constructivist theory and the theory of DI placing the student at the center of the learning process (Gash, 2014). Watson et al. (2015) suggested that the constructivist theory comprises six principles. The fundamental tenets describe what knowledge is perceived as, and the remaining tenets describe the process of attaining knowledge.

1. Objective reality, or what exists independently to individuals, implies that personal understanding of experiences is related to prior experiences.
2. Learning is distinctive and is created differently for each person.
3. The theory of constructivism functions in the same manner regardless of situations.
4. Learning occurs through the creation of new ideas and experiences.
5. Learning is influenced by the surrounding environments and experiences encountered. These experiences or circumstances become the “essences” that influence an individual’s acuity, elucidation, and functioning.

6. The learning process gives and individual the ability to take the information given and create knowledge or experiences of their own (Watson et al., 2015, p. 340).

Learning theories provide a basis to help understanding of how people learn and provide a way to explain, describe, analyze, and predict future learning. In that sense, a learning theory helps educators make more informed decisions around the design, development, and delivery of the process of learning. In the subsections that follow, I discuss four significant theories related to the theory of DI: the constructivist theory, Vygotsky's zone of proximal development (ZPD), Bloom's taxonomy, and Weimer's LCTT.

Constructivist Theory

Piaget's (1936) constructivist theory advocates learning as construction and is identified as emphasizing students rather than teachers, making the student the center of the learning experience (as cited in Blake, 2015, p. 61). According to Piaget's theory, the process of shifting the focus to students allows them to construct knowledge out of interactions and experiences. In this manner, the learner builds their understanding or knowledge to solve identified problems. While the constructivist theory changes the role of the teacher to become the facilitator, it encourages students to interact, exchange views and experiences, construct meaning, and gain knowledge that is based on their needs (Weimer et al., 2017).

Dewey and Dewey (1915) supported the constructivist theory through their theory of active learning, by emphasizing the importance of ensuring that topics of study be

relevant to student interests to increase their motivation to learn (as cited in Pardjono, 2016). Similarly, Weimer's (2002) LCTT places the student at the center of the learning process, and the teacher acts merely as a facilitator. In student-centered approaches, students are given the reins to decide upon learning topics that interest them and work with their teachers to select the most appropriate means of assessment that cater to their needs. When teachers employ methods of DI, they are aware that instructional approaches need to be adapted so that learners are provided with content that they are interested in learning to increase their desire to learn and be academically successful (Suprayogi et al., 2017).

Vygotsky and the Zone of Proximal Development

Vygotsky's (1986) ZPD assists teachers with the why and how to use DI because it outlines the specific developmental level where learning occurs for each student. Vygotsky's theory paved the road for DI by implicating that the individual learner must be studied within a particular social and cultural context (Clarà, 2017). His theory is based on the premise that social interaction is key to the development of cognition and higher-order functions. To foster such development, teachers must provide students with opportunities to interact with their peers and other individuals and practice independent learning. The model of DI, when used consistently, offers students opportunities and options of moving on to more complex material, gives teachers a more dynamic facilitating role, and creates a purposeful learning environment that maximizes more opportunities for meaningful learning experiences.

Vygotsky (1986) stated that the amount of learning varies from individual to individual and depends on their level of development. Because each student has a different level of development, teachers need to be careful when designing assignments because students are optimally engaged when academic tasks are just slightly beyond what they can do on their own (Murphy et al., 2015). Students can also become frustrated with work that is too hard and bored with work that is too easy. Differentiated instructional methods cater to students' needs within their ZPD. Because of these accommodations, students can devise solutions for problems and master new information through encouraging collaboration with peers (Gonulal & Loewen, 2018).

Bloom's Taxonomy

Bloom's (1984) taxonomy, made up of lower-order thinking and higher-order thinking domain, is used by educators to help students fully master a topic of interest. With consistent use of the model of DI, educators can differentiate learning and scaffold tasks so that early activities require students to remember and understand new terminology and concepts presented (Hutton-Prager, 2018). Teachers are also to ensure that activities that follow provide students with the opportunity to apply these concepts to progressively more challenging assignments (Hutton-Prager, 2018). Just as in the model of DI, learners progress through the lower-order thinking and higher-order thinking domains by generating new knowledge from the activities and experiences encountered, thereby becoming competent learners.

Bloom's taxonomy is a philosophy that enables educators to incorporate higher-order thinking activities and questions that stimulate students' thought processes and

learning abilities (Adams, 2015). It is crucial that educators consistently incorporate higher-order thinking methods to promote students' ability to think and problem-solve (Crompton et al., 2018) critically. Additionally, other researchers have reasoned that teachers should aim to include various activities that engage students in higher-order thinking to improve their cognitive abilities (Bromley, 2019; Hutton-Prager, 2018). While Bloom's taxonomy is a useful heuristic that helps teachers to understand the varying levels of cognitive, psychomotor, and affective demand, it also helps teachers to align assessments to the level of their objectives (Shore et al., 2016).

Weimer's Learner-Centered Teaching Theory. Learner-centered teaching is an approach that places the learner at the center of the learning; this means that the student is responsible for learning while the tutor is responsible for facilitating the learning. The model of DI is a response to the LCTT and the need for a learning-focused approach to instruction and education in schools. DI is an approach that enables teachers to plan strategically to meet the needs of every student. It is deeply grounded in the principle that there is diversity within any group of learners and that teachers should adjust students' learning experiences accordingly (Tomlinson, 2014). This model draws from the work of Vygotsky (1986), especially the ZPD, and from classroom researchers. Researchers have found that when consistent DI methods and are combined with learner-centered teaching, students learned more and felt better about themselves and the subject area being studied (Tomlinson, 2014). The evidence further indicates that students are more successful and motivated in schools if they learn in ways that are responsive to their readiness levels (Vygotsky, 1986), personal interests, and learning profiles (Murphy et al., 2015).

According to Weimer (2002), in a student-centered learning space, students are provided with the power to decide upon learning topics that interest them and work with their teachers to select the most appropriate means of assessment that caters to their needs. The learner-centered theory promotes the engagement of students, affords educators the ability to teach problem-solving skills, encourages students to think about thinking, allows students to have control, and encourages collaboration (Gilboy et al., 2015; Haber-Curran, & Tillapaugh, 2015). When students are included in the learning process, and the topics are relevant, they are more motivated to learn. The learner-centered theory considers students to be active agents that amplify their ability to learn as they bring their knowledge, past experiences, education, and ideas to the classroom.

Purpose of Differentiated Instruction

DI is merely attending to the learning needs of a student or small group of students rather than the more typical pattern of teaching the class as though all individuals learned in the same manner. The goal of a differentiated classroom is to maximize a student's cognitive growth and individual success. With the differentiated instructional model, teachers plan different learning experiences in response to each student's needs. Teachers can successfully enhance their students' growth and individual success by teaching each student at their skill level, therefore, allowing them to assist in the learning process. According to Gaitas and Alves-Martins (2017), the goal of a differentiated classroom is to maximize student growth and individual success by catering to students' learning needs rather than using the traditional approach of teaching the class as though all students learn the same. Allowing for each student to approach the

curriculum as they are able or according to their learning needs better enables them to retain the materials given, thus improving morale and the excitement for learning (Valiandes, 2015). The model of DI enables the cognition aspect, allowing misunderstandings to be addressed immediately, rather than persisting because the focus is keeping everyone at the same speed - as it has been in the system of education for years. Each student has work appropriate to their level of understanding, the advanced student having a heavier workload than the student who may be struggling to keep up. When teachers use DI to meet the individual needs of the students, they are preparing them to become active, effective learners for life; they can go beyond this to assist students that may have learning challenges and disabilities.

English Language Learners

Students who experience learning challenges or disabilities, such as English language learners (ELLs), may encounter issues with learning as well as using skills in the new language, including listening, speaking, reading, writing, and problem-solving abilities (Guay & Bureau, 2018). The progressively large number of ELLs is a major part of the diversity in the classroom and is reason why teachers are responsive to all students' needs (Luo, 2018). ELLs face the challenge of learning how to speak and write a new language (Ghaicha & Mezouari, 2018; Luo, 2018); regardless, teachers must ensure that all students, including ELLs, have access to the same material as their peers. Thus, teachers of ELLs who practice DI make modifications to the curriculum to ensure that their ELLs are afforded opportunities to gain knowledge or learn and expand their skills

in the new second language, leading to more actively engaged students and allowing the development of each student's talent (Ghaicha & Mezouari, 2018).

Gifted and Special Needs Students

When teachers differentiate their instruction, they also incorporate Gardner's (1989) multiple intelligence theories to pinpoint strategies that promote special education and gifted students the ability to learn the same content as their peers (Derakhshan, & Faribi, 2015; Robb & Bucci, 2015). Teachers need to be aware that all students' needs also extend to the gifted and special needs students (Wu, 2017). With DI, the struggling student or special needs student can get more help and the advanced or gifted student can be more engaged and challenged. All of these students will have the necessary skills to proceed in their education and adapt to the constant changes in their process of learning. However, when teachers differentiate their instruction, they enable all students, including gifted and special needs, to maintain their process of learning at a projected degree (Laine & Tirri, 2016).

Teaching and Knowledge in Differentiated Instruction

Teachers' understanding of how students learn, learning styles, and how the brain functions influence the specific strategies they use to accommodate students (Steinberg & Donaldson, 2016). According to Tomlinson et al. (2003), "the consistency of DI in a teacher's practice promotes them the ability to assess as well as address student's readiness levels, interests and learning profiles" (p.128). Sternberg (1985) and Gardner (1993) described similar theories that explained intelligence and learning as being unsolidified or changeable, meaning that it can be modified, and students' strengths can

be improved. Gardner (1999) stated that every person is born with simple bits of intelligence, and none are lesser or greater than the other. Gardner's (1983) eight self-governing intellects encompass "visual, verbal, musical, logical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic abilities" (Shearer & Karanian, 2017, p. 219). Teachers' awareness of students' readiness, brain function, and the way they learn help to influence their teaching practice; however, their perception of the model of differentiation plays an integral role in determining if they choose to implement it in their practice consistently or even at all.

Goddard and Minjung (2018) assessed 1,623 teachers in an elementary school to detect differences in the significance of teacher's perception as it relates to the use of DI. Coubergs et al. (2017) contended to answer the following queries: (i) how do teachers apprehend DI? (ii) are teachers employing DI methods in their classrooms? (iii) is there any significant difference between novice and experienced teachers with their understanding and use of DI? Goddard and Minjung collected data through a survey, demographic, and assessment data. The researchers concluded in their findings that although there were no significant variances between the perceptions of beginner and veteran teachers in their differentiation usage, there was great importance on teacher efficacy, collaborative work, as well as teacher beliefs for the use of DI as this, plays an integral role in teachers actively putting it to use in their practice (Coubergs et al., 2017; Ghaicha & Mezouari, 2018; Goddard & Minjung, 2018).

Differentiation Components—Features of Learning and Levels of Readiness

For DI to be consistently used, it is essential that teachers first determine the specific learning characteristics of their students, as this also affects the process of DI (Joli et al., 2018). The awareness of each student's learning characteristics then allows teachers the ability to successfully implement differentiated instructional methods that are engaging and cater to a variety of learning styles more effectively (Andrietti & Su, 2019). For differentiated instructional methods to be effective and for teachers to be consistent, they should be respectful and responsive to what students are interested in, how they learn, and their level of readiness. Consideration of students' interests enables enhanced learning for students by way of pertinent topics that they appreciate. Learning becomes more manageable as students are productive and academically successful.

Learning Styles. Compatible instructional strategies are necessary to cater to all learning style preferences represented in a classroom population. Learning preference involves the process by which an individual can consider, process, internalize, and retain new information. Bhagat et al. (2015) described learning styles as including five categories, aural, optical, demonstrative, movement, and demonstrative movement. Each student's preference for learning or knowledge acquisition is dependent on features that they are born with and those that are molded from their interactions in the classroom environment (Darrow, 2015). Learning profiles are influenced by intelligence preference, gender, and cultural differences (Gardner, 1993; Gardner, 1999; Sternberg, 1997). Many times, a learning style or how an individual learns may not align with the instructional approaches selected by teachers – meaning that the methods work for some students and

not for others (Darrow, 2015). When teachers adapt their practice to cater to the various preferences of learning, they offer students ample activities that stimulate each style on a daily lesson basis (Bhagat et al., 2015). Teachers must be aware of students who are not reaching their academic potential or who are not responding to the approaches and accommodate them according to their specific learning style to ensure their academic achievement increases.

DI anticipates providing adequate support to students with various opportunities that enable them to make significant connections with new experiences, develop new knowledge and skills by revealing how they are connected with things that are more alluring, stimulating, pertinent, and meaningful (Pilten, 2016). Teachers who make provisions for the various learning styles, such as visual, auditory, and kinesthetic, consider that all students learn differently and require other means to be engaged in new knowledge acquisition. Rytivaara and Vehkakoski (2015) affirmed in their research study that the intention behind DI by catering to each students' learning preference is to provide students with the opportunity to acquire new knowledge based on how they learn.

Readiness Levels. In DI, teachers must take into consideration students' readiness levels so that they can provide tailored teaching that will be designed to cater to the diversity of students – if students are not ready to learn this affects their ability to complete specific tasks (de Jager, 2017; Forlin, & Chambers, 2017). When DI is paired with student readiness levels, students are provided with challenging tasks that contain the element of difficulty and then support with the tools that are required to complete the challenge (Colquitt et al., 2017). The ultimate desire of any teacher is to have students

succeed. If the content being presented is at, above, or below a student's current mastery level, no growth will occur - frustration and confusion will result. When readiness levels are catered for, students are responsive to learning within their ZPD because it represents the next logical step in their ongoing knowledge or skill development (Haber-Curran & Tillapaugh, 2015).

Differentiating the Content. Teachers' pedagogy or instruction, as well as what students know are crucial factors that assist with ascertaining specific methods when student's learning needs vary in the classroom, such as using reading materials at varying readability levels; putting text materials on tape; using spelling or vocabulary lists at readiness levels of students; presenting ideas through both auditory and visual means; using reading buddies to employ when delivering content. What students are expected to learn comprises of the "facts, concepts, generalizations or principles, attitudes, and skills related to the discipline, as well as resources that epitomize those components" (Banks, 2015, p. 34). Content can also be interpreted as what students "know, understand, and can do" (Heng & Fernandez, 2016, p. 345). When teachers analyze the content being taught as well as their students' needs, they can determine what students are required to know and what they already should know. When the model of DI is employed consistently, it illustrates that teachers are aware that students are to be provided with opportunities to gain knowledge in the way that they learn best. Gonulal and Loewen (2018) suggested that teachers can differentiate the content to be learned so that it enhances students' knowledge acquisition by scaffolding techniques where some students, such as the gifted, would benefit more from working independently.

Differentiating the Process. Marshall (2016) expressed the process as the groundwork where students make meaning of the information, ideas, and skills they have acquired. Teachers must make sure that the activities selected for their students to demonstrate their learning are related or connected to the learning objectives they intend students to accomplish (Eysink et al., 2017). Through the provision of catered activities, students will have the opportunity to work with the knowledge they are expected to learn, understand as well as the necessary skills that will assist them with the ability to understand, critically think, and most importantly for them to apply their knowledge to solving real problems (Yadav, 2019). Nonetheless, the differentiation of the learning process involves a provision for students with multiple opportunities to demonstrate their understanding, encourage their collaboration, and by providing them with activities that assist with uncovering their perception and knowledge application to solving real-world issues.

Differentiating the Product. Similar to what students are required to learn and the ways they acquire the knowledge, it is crucial for teachers to ensure that how learners demonstrate their understanding be aligned with the lessons' or units' goals. Andrietti and Su (2019) identified the product of the learning process as the way a student conclusively demonstrates their learning or understanding; that is what they already know, what they now understand, and what they can do. Wan (2017) affirmed that students' ability to demonstrate what they have learned is the ultimate evidence that learning has occurred (p. 16). Differentiation of products can be done through the development of themes that offer students multiple ways of learning and that are aligned

with their learning styles. A product can be a variety of things rather than just one method. In essence, this part of the differentiation process has shown significant gains in student learning because students have been given a choice on how they demonstrate their knowledge (Wan, 2017). The process of differentiating products of learning provides students with the platform to create their meaning to what is being taught. To ensure that students are provided with numerous avenues to demonstrate their knowledge, teachers may integrate tiered tasks that enable students to work at their appropriate level and pace. Another strategy that teachers may employ is to use rubrics that encourage student success as they illustrate what is expected and how students will be graded. In essence, these tools are a form of guidance for students and they explain what students are expected to display for each type of grade. Finally, additional activities can be utilized that encourage students to express critical thinking skills using areas of interest and allowing students opportunities to utilize media or the internet as a medium to demonstrate their knowledge or understanding.

Differentiating the Learning Environment to Meet Students' Emotional Needs. According to Baudoin and Galand (2017), school and classroom environments shape students' emotions and affect both their achievement levels and psychological health. Mainhard et al. reported in 2018 that 4% of a secondary school population expressed that their emotions and ability to learn in a class are affected by adjustments or accommodations made for specific students and the interpersonal relationships they have with their teachers. Vezzaniet al. (2018) described in their research findings that everyone's emotions and feelings are created by past experiences and reactions to current

experiences. What individuals experience presently and, in the past, influences their self-concept, motivation to learn, and ability to work with others. While emotions and feelings impact the process of learning, teachers can maximize students' positive experiences in the classroom by ensuring that the classroom environment and relationships cater to every students' emotional and learning needs.

Positive classroom environments significantly determine students' behavior, achievement, satisfaction, and emotions. Young et al. reported in 2016 that teachers who effectively promote an affective or positive learning environment in their classrooms observed 75% increases in students' achievement. Students can perform better academically when their learning environment is positive; they feel safe, relaxed; they can take on challenges that otherwise would have been overwhelming. Errors are seen as learning opportunities (Turner & Harder, 2018). Positive, safe classroom environments promote students' ability and motivation to learn effectively, provide challenging and compelling learning experiences, positively impact their emotions, and enhances their academic progress (Sieberer-Nagler, 2016.).

Differentiated Instruction and Environment for Learning. A classroom or learning environment is a medium that, if effectively created, affords all students, including the gifted and those with disabilities or challenges, the ability to support one another in their academic learning. For students to be academically diverse means that their learning needs vary and can range from gifted students to those that are academically challenged or experience learning disorders (Gaitas & Alves-Martins,2017). The teacher has the responsibility to create a positive, safe, and supportive classroom and

this can be achieved by including students in the process of creating rules, procedures, access to space, time, and resources to assist with the shaping of an accepting, supportive and differentiated learning environment (Haggis, 2017). Liverset al., reported in 2018, that students that are identified as being gifted, having a disability, and academic challenges achieved 40% more of the content being taught when teachers differentiated their instruction, included students in the process of their learning, and practiced inclusion – where all students complete activities that cover the same content but at their learning levels. Gifted students, and students with disabilities, can succeed at a higher rate academically and emotionally in a classroom environment that is consistently differentiated and supportive of their needs (Ahmad et al., 2017). According to Wan (2017), a homogenous learning environment is created when teachers ensure that all activities, strategies, and forms of assessment are modified so that the diverse needs of all students are met.

Differentiated Instruction and Assessment. A differentiated assessment helps diverse populations of students to successfully demonstrate their competencies in particular ways that align and respond to their varying learning needs (Brown & Harris, 2016). According to Gipe and Richard (2018), when teachers modify and match assessments with various learning needs, their students experience 35% learning gains and enhanced their abilities to show what they have learned. Van Geel et al. (2019) reported in their research that when students are provided with multiple opportunities to demonstrate and apply what has been learned, they become more independent and confident learners. Differentiated assessment strategies provide students with various

opportunities that align with their specific learning needs to demonstrate their understanding, and their academic success increases at a higher rate (Allington, & Gabriel, 2012).

Inconsistency With the Implementation of Differentiated Instruction. If the method of DI is inconsistently used, teachers are unable to manage what students learn, how they learn or are assessed. According to Tahiri et al. (2017), a lack of or inconsistency of DI in the classroom caused a 30% reduction in student learning or achievement in comparison to neighboring elementary schools where teachers consistently utilize the model of DI. The differentiated instructional model is responsive to each students' individual needs and is a fundamental component in maximizing students' growth and enabling them to experience academic success (Lee, 2018). DI gives students more control of the learning process, students move from being a dependent learner to independently making decisions about what is important for him or her to learn, and this makes learning enjoyable as students are empowered.

Current research illustrates teachers' inconsistent use of DI at the elementary and secondary levels (Ghaicha & Mezouari, 2018; Graves et al., 2018). Such empirical studies provide valuable insights about teachers' and administrators' proficiency as it relates to the process of implementing DI. In this section, the significance of teachers' knowledge and understanding of the differentiated model plays a role in their consistent use of the model. Coubergs et al. (2017) scrutinized teachers' perceptions and consistent utilization of DI in their practice. This study focused on the regular employment of differentiation in teachers' classrooms across various subjects and considered the factors

that made possible or deterred the process. Although Coubergs et al. (2017) data discovered that most of the teachers that participated in the survey were knowledgeable about DI, it was made apparent that their use of DI was inconsistent primarily due to limitations in knowledge about resources or tools and lack of time for preparation. During focus interviews, Coubergs et al. reported that 43% of teachers felt that the vast diversity of the students in the classroom was a significant limitation to the process of implementation for DI. Dijkstra et al. (2017) expressed in their research that teachers believe that DI involves adjusting strategies, methods, and assessments to cater to the high demands of students rather than teaching reactively, which is when teachers attempt split-second adaptations as students experience difficulties.

Furthermore, Weimer (2013) emphasized that teachers' inconsistency with implementing or adapting to a learner-centered approach is mainly due to the belief that teachers are not "covering" enough content. If teachers switch towards an approach that places the learner or student in the center of the learning process, they will need to redefine the role of content (Bondie et al., 2019). Remember, the role of content in the class is to guide the knowledge base students must acquire, and to provide an opportunity for developing learning skills within that knowledge area. A learner-centered teaching approach uses content to accomplish this, while a teacher-centered approach just covers all the content that can fit into the course (Hanewiczet al., 2017). It is more important that students learn how to use their attained knowledge rather than know all the facts presented in the vacuum of a classroom (Brevik et al., 2018). A second common reason for teacher resistance is the belief that only very advanced and mature students will

benefit from this type of teaching practice (Wan, 2017). Teachers may not believe that beginner students can learn enough from these methods and need to be schooled in the basics first (Choi et al., 2019). However, this is a widely accepted misconception because learner-centered approaches can benefit any student despite their educational starting point (Weimer, 2013). Thirdly, teachers may feel threatened when shifting the responsibility for learning to their students (Kaymakamoglu, 2018). It is difficult, especially for experienced teachers, to let go of complete control in the classroom and share power with students (Bondie et al., 2019). For students to learn, they must be given more opportunities and responsibilities to engage with the concepts and construct their understanding (Weimer, 2013).

Gaitas and Alves-Martins (2017) analyzed the factors that affected teachers' difficulty in the process of implementing differentiated instructional strategies. The purpose of Gaitas and Alves-Martins' study was to uncover precisely what elements affected teachers' ability to implement DI consistently. Two hundred and seventy-three elementary school teachers participated in this study. Participants completed a thirty-nine-item questionnaire and participated in an interview. Gaitas and Alves-Martins highlighted four findings as a result of these studies. Firstly, teachers' perception of DI was not correlated to any research theory but rather were propelled by their teaching experiences. Second, data collected from the questionnaire conveyed that teachers felt that support teams would make a significant impact and provide the support they needed to assist with the process of implementing differentiated instructional methods. Third, the teachers suggested that training or workshops be put into place that served to improve

students' writing skills. Finally, teachers stated that additional planning time needs to be included in teachers' timetables to support the implementation of DI. According to De Neve and Devos (2016), although teachers are significant contributors to the process of implementing and using differentiation, it is also crucial for administrators even to understand DI and receive training so that they can assist teachers with improving their practice. Wan (2017) suggested, just as Gaitas and Alves-Martins (2017), that principals and administration needed to enrich their understanding of DI to support their teachers better and assist them in using DI in the classroom consistently.

Implications

The literature review provided information on the model of DI, the relationship with the LCTT, the advantages and barriers of implementation, and how inconsistent use of the model of DI impacts student learning and achievement. It also provided insights on how teachers can utilize DI to modify the learning process to cater to all students' individual learning needs. This information guides this study as I discovered the perspectives of teachers on Weimer's (2002) differentiated instructional model of learner-centered teaching. In this section, I concluded by briefly foregrounding some of the study's implications for practice, and some of the directions for future research that stem from the project. Data collection methods involved virtual interviews of 15 elementary Grade 6 teachers. Accordingly, a significant practical contribution of the present research was that it provides much-needed empirical data on the insights of the subjects, on how their perception of DI plays an integral role in their consistent use of the model in the classroom. Anticipated findings of the research from the data collection and analysis

included educators obtaining a clearer understanding of the differentiation model. This study intended to explore the inconsistent use, and implementation of Weimer's (2002) differentiated instructional model. This information can be used to assist other schools, and other educational institutions learn how to ensure that teachers are provided with the necessary resources and training to implement the model of DI with their teaching practice consistently.

Implications for Possible Project Directions

The implications of this study will aid in helping all classroom teachers consistently employ DI. This project study will provide insights on specific strategies and or methods teachers can utilize to implement DI effectively. Recommendations will include professional development or training workshops for both classroom teachers and administration to improve their implementation of DI and learn strategies that enhance students' learning. The study's conceptual framework, LCTT by Weimer (2002), allow ed insights into why teachers in elementary schools in Beach School District are inconsistently implementing Weimer's LCTT differentiated instructional model within their classroom instruction. The exploratory nature of this study provided other researchers with the same topic referring to this study, and others like this study. The referenced literature within this study presented a pattern of data that highlighted institutions with similar perceptions and issues with consistent use of the DI model. Hopefully, due to the findings in this study, more will be learned about the relationship between teacher's perceptions and consistent use of Weimer's differentiated instructional model.

The purpose of this study was to explore teacher perception in Beach School District at the study site about their implementation of Weimer's (2002) differentiated instructional model since little is known about how teacher perception and understanding of the model can affect the consistent use in the classroom. The research question was directly aligned with the purpose of the study as it is concerned about teacher perception and the implementation of DI in the elementary classroom. In this study, I attempted to provide clarity to the research question, related to the study's problem, why teachers are inconsistently using Weimer's (2002) differentiated instructional model at the study site.

Tentative Directions for the Project

The interim directions for the project have reflected an opportunity to better understand the local setting, national data, and disparity between teacher perception and use of the DI model. For this study, insights were gained about the topic that would hopefully obtain pertinent qualitative data that could provide formal and informal practices that would be beneficial to understanding why teacher perception affects the consistent use of the differentiated instructional model. The results from this study allowed me to develop goals toward nurturing and supporting educators on the differentiation model as well as provide professional development opportunities that inform educators on the advantages of consistency of the model. Because my study is exploratory and interpretive, it provided opportunities for future research, both in terms of the validation and development of educational theory. More research is necessary to refine and further elaborate on our novel findings.

Summary

The inconsistent use of the model of DI has been proven to negatively impact learning for all students, as indicated in the literature review (Swanson et al., 2019). When the LCTT is combined with DI, all students including the gifted, those with disabilities, ELL and ESL students, increases are observed in their achievement and motivation for learning (Altintas & Ozdemir, 2015; Han & Yin, 2016; Pardjono, 2016; Suprayogi et al., 2017). Some studies have indicated that teacher perception of the model of DI plays a role in impacting their use and implementation in the classroom (Coubergs et al., 2017; Guay et al., 2017). Researchers also indicated that teachers may need additional support, such as training educators on strategies they can use to consistently implement DI in the classroom (Ghaicha & Mezouari, 2018; Graves et al., 2018). The problem at the elementary schools in Beach School District was the inconsistent use of Weimer's (2002) LCTT differentiated instructional model in their teaching practice.

In Section 1, I described the problem of the inconsistent use of the differentiated instructional model, the problem's significance, and the research question used as guidance for this project. The purpose of this project study was to explore teacher perceptions in Beach School District about their implementation of Weimer's LCTT differentiated instructional model within their classroom instruction since little is known about how teacher perception of the model affects the use or implementation. Weimer's (2002) LCTT was the chosen conceptual framework for this study. (RQ1) What are teachers' perceptions about why they are inconsistently implementing Weimer's differentiated instructional model? This section also includes a comprehensive literature

review and a review of the broader problem. Many of the studies I have reviewed for this project study focused on teacher perception of the model of DI and the impact on the implementation in the elementary classroom, as well as the barriers affecting implementation. In the final part of Section 1, I focused on the implications I drew from the literature review for more research on the inconsistent use and implementation of DI and teachers' perception of the model. A possible project was suggested, and the data that will be collected from the virtual interviews will determine the actual focus of the project and how it will be implemented at Beach School District elementary school.

In Section 2, I covered the research design, qualitative methodology, proceedings, and findings from this basic qualitative study. In Section 3, I described the project selected to educate teachers on strategies for implementing DI to ensure that all students' needs are met. This section also provided insights on how the administration can assist teachers with the resources and tools they require to employ the model of DI in their practice consistently. In Section 4, I concluded this study with a reflection of my research journey, reading an abundance of articles, composition of this research paper, conducting data analyses, development, and implementation of the identified project in Section 3.

Section 2: The Methodology

In this project study I explored why teachers in elementary schools in Beach School District were inconsistently implementing Weimer's LCTT differentiated instructional model in their classroom instruction. In the subsections that follow, I include (a) the research design and approach, (b) a description of the qualitative tradition, (c) the participant selection, (d) the data collection methods, and (e) the analysis of data.

The research question (RQ) designed for this study was:

RQ: What are teachers' perceptions about why they are inconsistently implementing Weimer's (2002) LCT differentiated instructional model?

To address the research question, I used a basic qualitative research method. A basic qualitative research design is based on a social constructivism perspective (Ridder, 2017). According to Harrison et al. (2017), basic qualitative studies are based on an in-depth investigation of a single individual, group, or event to explore the causes of underlying principles. A basic qualitative design helps the researcher to understand the complexity of a case in the most complete way possible. Through the use of basic qualitative data sources, researchers may attain the most vibrant possible understanding of a phenomenon (Gammelgaard, 2017).

Due to the nature and small sample quantity of the participants involved, a basic qualitative study was a strong choice because it yielded the most useful data. This method is designed to understand the subjective, lived experiences and perspectives of participants. I chose a basic qualitative research design because I sought to examine why elementary teachers were inconsistently implementing Weimer's (2002) LCTT

differentiated instructional model. For this research design, I collected data from virtual interviews (Appendix C) and a researcher journal (Appendix D). These identified methods of data collection assisted me in answering the posed research question through participant responses during the virtual interview process and the researcher journal, which I used to compile what I learned from the interviews as it related to the research question. Two forms of data that I used for this study included virtual interviews and a researcher journal.

Research Design and Approach

In their research, Morgan et al. (2017) explained that the purpose of a basic qualitative study research design is to comprehensively incorporate multiple sources of data to provide detailed accounts of complex research phenomena in a real-life context. Qualitative research is aimed towards gaining a deeper understanding of a specific aspect of a phenomenon and is employed to aid understanding of how the selected participants derive meaning from their experiences and how these experiences influence their behaviors (Mays & Pope, 2020). Qualitative research is consistent with understanding how teachers are using DI and if teachers perceive the use of DI as contributing to improved learning for students in the Beach School District (Gaitas & Alves-Martins, 2017).

The choice of this research design derived from the identified problem and research question because basic qualitative research concerns establishing the answers to a phenomenon through the study of human behavior via observation, participant's opinions, themes, and motivations. In my study, I focused on developing a deeper

understanding of the problem by comparing the local problem from participants' perspectives. I identified the problem of this study as the inconsistent use of Weimer's (2002) LCTT differentiated instructional model by elementary school teachers. Data collection included virtual interviews and a researcher journal.

To address the study problem, I used a basic qualitative study methodology. This model allows for a researcher to take an in-depth look at a small group of subjects, thereby narrowing the field of research. In the basic qualitative study approach, data was collected via different sources for compiled analysis. Due to the nature of the inquiry and the small number of participants involved, a basic qualitative study was a strong choice because it yields the most useful data with a small sample size. The basic qualitative study approach was suitable for my research as it provided me with the ability to gather valid data from participants' responses and perspectives through virtual interviews (see Brooks & Normore, 2018).

Furthermore, the virtual interviews provided guidance that led me towards answering the research question and making replication of results by future researchers possible. I conducted virtual interviews with Grade 6 elementary teachers at Beach School District elementary schools. I used the researcher journal to compile information from the transcripts of the interviews to identify similar themes participants shared. These themes provided insights into the study's research question.

Qualitative Tradition

I identified the basic qualitative study approach as the most effective method to gain the information sought after. Basic qualitative studies also use more than only

interviews and researcher journals. They may extend to case histories databases, questionnaires, participant reflections, and other components. I considered a phenomenology study but rejected it because this approach observes a complex phenomenon in real life by identifying different factors that interact with each other and on the experiences of persons (Sohn et. al., 2017). This study was focused on teacher perceptions in elementary schools in Beach School District about their implementation of Weimer's LCTT differentiated instructional model. A phenomenology approach would not have been appropriate for this study due to its focus being on the commonalities of the participant's lived experiences (Creely, 2018).

The grounded theory approach was another design I considered but also rejected because it is used to attempt to explain why a course of action evolved the way it did by observing a large pool of subjects (Everett et al., 2017; McCann & Polacsek, 2020). A grounded theory approach would not have been appropriate for this study as it illustrates that analysis and development of theories occur after data collection (Charmaz, 2017) and the pool of participants for this study was rather small. My intent in this study was not to develop a theory of DI, but rather to explore teacher perceptions in elementary schools in Beach School District about their implementation of Weimer's LCTT differentiated instructional model in their classroom instruction.

Participants

I selected the participants for this basic qualitative study from two elementary schools in the Beach School District of the study site, which educates students in kindergarten to Grade 6. There are currently eighteen teachers, two deputy principals,

two principals, an educational psychologist, a music teacher, an art teacher, a P.E. teacher, and two secretaries across both schools. The teaching staff at the Beach School District elementary schools is made up of two men and 24 females. Approximately 85% of the teaching staff have 10 or more years of teaching experience, whereas two teachers have 5 to 7 years of teaching experience (principal, personal communication, May 15, 2020).

Criteria for Selecting Participants

I used purposeful sampling for this study because the participants whom I selected for the study needed to be knowledgeable and have experience with the phenomenon of interest being studied (see Shaheen & Pradhan, 2019). This purposeful sample was an adequate technique for selecting the study's participants based on their availability, their willingness to participate in the study, and the ability to communicate their experiences and their opinions in an articulate, expressive, and reflective manner (Gaus, 2017). Purposeful sampling aligns with my study because elementary teachers with knowledge of the DI model, along with 5 to 10 years of teaching experience, satisfied the criteria and were invited to participate in the study.

I purposefully selected a total of 15 teachers from a pool of 24 teachers at the project study site to participate in the study on the basis that this group of teachers were knowledgeable about or had experience with the phenomenon of interest (see Benoot et al., 2016). Elementary teachers who were eligible to participate and who met the following criteria were selected as potential participants for the study. Each chosen participant needed to be (a) a full-time teacher at the elementary level, (b) have 5 to 10

years of teaching experience, (c) teach Grades 5 or 6, and (d) have knowledge of Weimer's (2002) LCTT differentiated instructional model.

Justification for Participant Number

I selected participants in this basic qualitative study from a population of 24 teachers at the Beach School District elementary schools. I chose a set number of 15 participants to start the study from those who voluntarily consented to participate. Boddy (2016) stated that data saturation can be achieved with a sample size of only 12 participants. Malterud et al. (2016) described in their research that in qualitative studies, sample sizes cannot be determined by formulas or redundancy, but rather on "procedures from a specific analysis method which are termed information power" (p.2). Information power refers to the notion that the greater extent to which a sample contains relevancy to the study, the lesser the number of participants will be needed (Dornan & Kelly, 2017). A sample size of 15 participants was sufficient for a basic qualitative study approach because it allowed me to focus on the perspectives and experiences of the participants as it relates to the research question and phenomenon of interest (see Malterud et al., 2016). I used the sample size of 15 participants to provide an in-depth inquiry towards answering the research question.

Procedure for Gaining Access to Participants

I am a past student of one of the Beach School District elementary schools. I also completed 2 weeks of work link experience in my senior year of high school and worked 1 year as a teacher's aide after graduating from high school. One principal and 11 of the teachers were my past teachers at the study site, so we were familiar with one another

over the previous 20 years, which enabled a trusting relationship that is essential in qualitative research (Peticca-Harris et al., 2016; Patterson & Dawson, 2017). I have worked for 10 years as a secondary music teacher at the Beach School District High School and have no conflicts of interest. Before conducting the study and obtaining Institutional Review Board (IRB) approval, I contacted the principals and administration to discuss the study's intent, access to participants, and permission to conduct the study at the study site. After this, I submitted my application for IRB approval. Once I obtained IRB approval from Walden University (09-15-20-0535998), I began by contacting the principals and administration and provided them with specific information that pertained to my study's purpose, procedures, and the confidentiality of participants as well as the district.

Once permission was given, I contacted principals and administration, described the intent of the study, and requested the provision of prospective teacher participants' emails from the staff directory in the school district. I then contacted the teachers via email who have worked full-time for 5 to 10 years at the Beach School District elementary schools, have taught Grades 5 or 6, and know Weimer's (2002) LCTT differentiated instructional model. Each participant was contacted via email with a letter that explained the purpose and intent of the study, justification of the research, the opportunity for their voluntary participation, and participant confidentiality.

Researcher-Participant Working Relationship

I am a past elementary student at one of the elementary schools in this study. The selected teachers for this project are only known in the professional capacity, and I have

interacted with them during Professional Development workshops. Because the researcher and participant relationship are a crucial determinant of what comes out of the research, the first and most critical step to ensuring the establishment of a positive work relationship is to identify notify participants of the research intent, as well as secure their agreement to be a part of the project. For a positive relationship to be sustained with participants, trust must be established and nurtured so that it can be retained throughout the project to ensure quality and valid results (Norman et al., 2019). Each of the 15 selected teacher participants were provided with a document that contains consent forms and codes of conduct, confidentiality, and anonymity of the participants' involvement in the research project. According to Berry (2016), it is suggested that researchers share with potential participants the intention of the study. During the meeting with the 15 selected participant teachers and principals, I described the purpose of the project study, and I explained how I planned to collect data by using virtual interviews with the selected teachers and a researcher journal. I informed all participants of the expectations of their participation in the study.

Participant Protection and Confidentiality

In any research, participants must be aware that their rights, privacy, and confidentiality are protected. As I mentioned previously, I contacted each of the 15 selected teacher participants by email with a letter (see Appendix B) that explained the purpose or intent of this study, justification of the research, and the opportunity for them to participate voluntarily. I requested permission from the principals and administration to hold a meeting with the 15 teachers to elaborate on the purpose of the study and how I

intended to collect data and the importance of their participation. At the close of the meeting, I notified teachers that I would send a consent form that they can fill out, sign, and send back via email if they are willing to participate in the study.

Data Collection

Interviews and a researcher journal were the selected data sources because they are in alignment with the conceptual framework, the identified problem, and the posed research question. I presented my application and request to the IRB through Walden University to gain approval to conduct my research. Once I obtained IRB approval, I presented my consent and approval letter to the Ministry of Education and the Principals of the Beach School District elementary schools. I estimated that data collection would be completed in approximately 2 to 6 weeks and communicated this to the Ministry of Education and the Principals. Once I received approval from the study site, I submitted my IRB application, and upon approval, I acquired the emails for the 15 selected teachers and sent them their letter of invitation.

Each participant received a letter of invitation that described the purpose, overall intent, data collection methods, and their opportunity to participate voluntarily. If the 15 selected participants agreed to participate in the study, they were required to submit a completed and signed consent form by email before data collection commencing and schedule an interview. All interviews were scheduled during the school week, Monday through Friday, but during the hours after school between 4:00 p.m.and 7:00 p.m. to avoid interruptions of instructional teaching times. I asked the principal of each school permission to conduct the study at the school site and interview the teachers in the

staffroom. I intended to interview three participants each day for a total of 5 days, and each interview should last approximately 30-minutes to 45-minutes.

Justification of Data Collection

Because the purpose of this basic qualitative study was to explore teacher perceptions in Beach School District elementary schools about their implementation of Weimer's' LCTT differentiated instructional model within their classrooms, virtual interviews, and a researcher journal were the appropriately selected methods for data collection (Barrett & Twycross, 2018).

Virtual Interviews

I scheduled virtual interviews with each of the 15 selected teacher participants. This method of data collection was efficient and provided insights into each participant's perception, understanding, and the use of the model of DI (King & Hugh-Jones, 2018). Each virtual interview was audio-recorded, upon consent given from the participants.

Data Collection Instruments and Sources

The data collection instrument sources that I used are researcher produced and will include interview scripts and questions (Appendix C), a researcher journal (see Appendix D), and audio file recordings of the virtual interviews.

Virtual Interview Protocol

I conducted virtual interviews (Appendix C) with each of the 15 teacher participants to gather their perceptions about implementing Weimer's (2002) LCTT differentiated instructional model in their classroom and teaching practice. The interview questions were developed with the assistance of three teaching professionals at the high

school where I am employed at the time of this study, which is separate from the study site. These teaching professionals have been teaching for over 15 years, have been heads of their departments, and now serve as the Senior Management Team as Principal and Vice Principals of our high school. I structured my interview questions so that they are open-ended to allow the participants to elaborate on their experiences and perceptions. Open-ended interview protocols also assist researchers in gaining deeper understandings of the phenomenon being studied (Farooq & De Villiers, 2017). With an open-ended protocol, I was also able to generate additional questions that further probed the participants for more information and insights into the study (Oltmann, 2016).

To avoid interruptions during school hours, I arranged for the virtual interviews to be scheduled during the school week Monday through Friday but during the hours after school between 4:00 p.m. - 7:00 p.m. I intended to interview three participants each day for a total of 5 days, and each interview lasted approximately 30-minutes to 45-minutes. When the interview process began, each participant was briefed on the purpose and intent of the project study and reminded that their participation in the study is voluntary, which means that they will be allowed to remove themselves at any time during the interview process. Each participant was also be notified that any response they provide will be kept confidential and that their identity will not be revealed at any point during the interview or in the research for the study. At the end of the interview, each participant was thanked for their voluntary participation. To ensure the accuracy of the data that will be collected, upon participants' consent, scripts will be generated. After the virtual interviews had

taken place, I had each participant review their script and report back on the accuracy of the information.

Birt et al. (2016), stated in their research the importance of using member checks to improve the accuracy, credibility, validity, and transferability of a study. Each participant was emailed a copy of their interview transcription and was asked to review the information for accuracy with their responses and the credibility of findings. Participants were asked to provide their responses within a week. All 15 teacher participants responded positively about being selected to be a part of the study and assist with improving their consistent use of DI. Through the member checking process, all participants confirmed that the information recorded in their interview transcripts accurately reflected their responses during the interview process. Peer debriefing, another method of ensuring accuracy and credibility of data, was also used. A team of education professionals in a separate district reviewed my interview transcriptions and coding. Both the interview transcriptions and coding documents were sent via email. Each educational professional was asked to review the transcript data and coding to offer their interpretation and possibly additional insights to support the research (Iivari, 2018). Through this peer debriefing process, no researcher biases were identified, and no suggestions were made for changes to the data analysis.

Researcher Journal

A researcher journal is a useful data collection method that helps the researcher to record and reflect on all that has been observed on a phenomenon being studied (Bryce et al., 2018). Researcher journals are also used for improving the reliability of research and

removing bias (Lincoln & Guba, 1982). I used the data collected from the virtual interviews to assist me with understanding my findings regarding teachers' perceptions about their implementation of Weimer's (2002) LCTT differentiated instructional model in their classroom instruction. The researcher journal as a secondary data source helped me to keep a personal record of the process, key decisions and feelings during the study, and offered me the opportunity to learn from the research process (Dodgson, 2019).

Sufficiency of Data Collection Instruments to Answer the Research Question

As the nature of this study is a basic qualitative study, virtual interviews and a researcher journal are the best forms or sources of data collection to answer the research questions of the study (Farooq & De Villiers, 2017). Both methods were sufficient in determining the quality of the data in this study. Interviews are efficient methods in gathering information that provides insights into an individuals' perspective and allows researchers to acquire a deeper understanding of the phenomenon being studied. Researcher journals enable researchers to observe and reflect on the phenomena being studied in the study (Robey & Taylor, 2018). Researchers can then combine the interview data collected with what they have compiled in their researcher journal to determine the answer to the research question posed (Owen-Smith et al., 2017).

Process for How Data will be Generated, Gathered and Recorded

Data Generation

Data generations are the theory and methods used by researchers to create data from sampled data sources in a basic qualitative study (Everett et al., 2017). Data sources for this study included the interview participants and researcher journal. All the data that

was collected during the conducted virtual interviews and researcher journal will be compiled in spreadsheets.

Data Gathering Process

The data that was collected and organized into spreadsheets was analyzed to identify common themes and ideas using codes. The interview scripts and researcher journal were examined for patterns and similarities. With the collected data organized into spreadsheets, I was able to evaluate the collected data based on variables of interest in an established systematic fashion that enabled me the ability to answer the stated research question and evaluate possible outcomes.

Data Recording Process

As mentioned, data was compiled into a series of spreadsheet documents. Virtual interview data and the information recorded in the researcher journal was organized using in vivo coding to identify themes and categories across participants concerning why they are inconsistently using Weimer's (2002) LCTT differentiated instructional model in their elementary classroom. My process for coding is described in more detail in the Data Analysis section. I will also include a reflection of my understanding of the data collected in the comments portion of the spreadsheet. A researcher journal was utilized to illustrate each virtual interview's specific details to separate my biases from the perspectives of the research participants.

Systems for Keeping Track of Emerging Understandings

To keep track of the data that will be collected, I created a series of spreadsheets that were used to track the data collected from each teacher participant. I used codes to categorize the obtained data from virtual interviews and researcher journal. Specific strategies of Weimer's (2002) LCTT differentiated instructional model were recorded in a separate spreadsheet. The data collected from the virtual interviews and researcher journal were analyzed continually (Aspers & Corte, 2019). A separate sheet was created to organize the factors indicated by the participants that cause the inconsistent implementation and use of DI in their teaching practice. I also included a reflection of my understandings of the collected data in the comments of the spreadsheet template. A research journal was utilized to illustrate the specific details of each interview I conducted. Each log included the date, time, and location I met with each participant. I also included in the research log how I felt after the interviews, noting anything that I thought to be intriguing, interesting, disturbing, or that might cause room for speculation (Kozleski, 2017). The research journal assisted me in gaining insights into each teacher participant's perceptions and also identified my own biases, separating participants' perspectives from my preferences to answer the research question.Procedure for Gaining Access to Participants

Qualitative data collection occurs through interactions with participants via interviews, surveys, and questionnaires, where researchers gather the insights and experiences of participants (Saunders et al., 2018). However, before qualitative data are

collected, the researcher needs to gain permission from the study site and participants (Dempsey et al., 2016). Before data collection, I composed a letter that will describe the intention of my proposed study and submit it to the Ministry of Education. Once I received clearance from the Ministry of Education, I communicated via e-mail and telephone with the principals, deputy principals, and administration, elaborating on the specific details of this project study. I asked permission to conduct the study at the elementary schools at Beach School District. When I gained approval from the administration and principals, I sent the 15 selected participant teachers a letter of invitation. After I planned to request to meet with the principals, deputies, and the 15 elementary teachers where I explained the details of the study, justification for the study, and provided the selected participants with the opportunity to ask questions or voice any concerns they may have. Virtual interviews with each participant, as well as assigned times for lesson observations, were then scheduled.

Role of the Researcher

I am a past elementary student at one of the elementary schools in this study. However, the current teachers participating in the project are only known professionally. Additionally, being an alumnus could affect data collection, as biases may be present in terms of comparisons to how the elementary class functioned or was taught years ago compared to now with the current teachers.

During the virtual interview, I made every effort to provide a comfortable atmosphere for the participant. Prior to the interview, participants were informed that selection is based on their invaluable knowledge on the topic. I informed the participants

that they have the option to stop the interview or take a break for any reason at any point during the interview. I also offered the interviewees the opportunity to ask me any clarifying questions at any point during the interview. Before the meeting, I asked the participants if they consent to the audio recorder before I start the recording. I explained to the participants that audio-recordings will be made to ensure the accuracy of the responses.

Data Analysis

In the subsections, I described (a) when data was collected, (b) how data was collected, (c) coding procedures, (d) software application, (e) ensuring the quality of procedures, (f) member checks, (g) triangulation, (h) peer debriefing, (i) researcher bias, and (j) discrepant cases (see Vaismoradi et al., 2016). In this study, data analysis continued for the duration of the study and will follow Watkins's (2017) rigorous and accelerated data reduction (RADaR) technique, which includes (a) prepare and organize collected data, (b) review and explore the data, (c) create initial codes, (d) review those codes and revise or combine into themes, and (e) present themes in a cohesive manner. Additionally, I used the thematic analysis model to analyze the content from the virtual interviews and researcher journal. Thematic analysis is applicable to texts such as an interview transcript, where the researcher closely examines the data to identify common themes and patterns of meaning that come up repeatedly (Vaismoradi & Snelgrove, 2019).

For a complete analysis of the data collected, I first transcribed each interview using Microsoft Word 24 hours after each interview. For organization and participant

confidentiality, each of the interview transcriptions was assigned two letters and a number (e.g., TP1, which represents Teacher Participant 1). Virtual interview data was analyzed using thematic analysis and NVivo coding strategies (Maher, Hadfield, Hutchings, & de Eyto, 2018). Active learning, cooperative learning, inductive teaching, and learning from the LCTT framework served as the three categories for the sorting and coding of collected data. The scripts from the virtual interviews were the first data source that I examined for patterns and related themes using the categories. The researcher journal was examined for any patterns and related themes using the LCTT categories. Any identified patterns that are identified will be compiled in a spreadsheet.

When Data Was Collected

Data collection for this project study was expected to take place over the course of about 4 to 6 weeks. During the week URR permission was given, I first contacted principals, vice principals, and the selected 15 participants of the Beach District Elementary Schools and informed them of the purpose of this study and provide an invitation and consent form to participate voluntarily. When the 15 teacher participants chose to participate, they were required to email their consent form. After receiving the participants' consent forms to participate in the study, I scheduled a time during the week following Monday through Friday from 4:00 p.m. to 7:00 p.m., where they could each participate in a 30 to 45-minute virtual interview. Once each teacher participant had scheduled a time, interviews will commence, and with their permission, I recorded the audio for each virtual interview for data accuracy.

How Data Was Collected

The data analysis process consists of three characteristic activities: (a) coding, (b) examination of meaning, and (c) generation of a description of social reality by identifying themes (Vaismoradi et al., 2016), which was followed for this study. The process of data analysis requires researchers to systematically search and arrange their chosen data collection instruments, such as interview transcripts, recordings, and observation notes, to increase their understanding of the phenomenon being studied (Castleberry & Nolen, 2018). Data for this study was collected using the created protocols for interviews and the researcher journal.

In the subsections that follow, I addressed the process of coding the data that was collected and the software application. I also discussed strategies to deal with any discrepant cases that may be encountered. Before the process of coding, all data that was gathered from the interviews, audio recordings, and observation field notes was organized and compiled into Excel Spreadsheets. Common themes and ideas were highlighted using codes. Each data collection instrument was organized into a separate table labeled with the date and time that each instrument was used, and participants involved (symbols will be used to protect identities). On each data collection instrument table, there was also space where I can record notes and identify trends and patterns. All collected data was saved on a removable flash drive that was only accessible by the researcher to protect the privacy and confidentiality of the participants.

Coding Procedures

The purpose of coding in qualitative research is to assist the researcher in transforming the data that will be collected into a format that is suitable for computer-

aided analysis (Vaughn & Turner, 2016). The process of coding identifies ideas or themes, which may also include subthemes that enable researchers to answer a research question of a study (Vaismoradi et al., 2016). Before data analysis, categories and themes were identified or predetermined based on this study's conceptual framework, Weimer's (2002) LCTT model of DI.

Data collected from the virtual interviews was analyzed first by in vivo coding, which is the practice of assigning a label to a section of data, such as an interview transcription, using a simple word, phrase, or sentence that is highlighted as significant from the segment of text (Manning, 2017). I used in vivo coding to review the written interview transcripts to highlight common ideas, themes, and patterns expressed by the teacher participants. Active learning, cooperative learning, inductive teaching, and learning from the LCTT framework (Weimer, 2002) served as the selected predetermined codes for the narrative analysis of the data, as they are essential components of the LCTT framework and are important for teachers to effectively implement DI in their classroom and teaching practice (Cummings et al., 2017). The highlighted words, phrases, and themes were recorded in a table. Afterward, I analyzed the generated list to identify key categories. To assist with gathering sound information, I ensured to use the probing questions found at the end of the interview protocol (see Appendix C).

Software Application

Software application affords qualitative researchers the ability to store, code, and systematically retrieve the qualitative data collected in their research (e Silva & de Almeida, 2017). Such technology helps to organize, manage, and analyze data. The

software application also saves researchers time, manages a large amount of qualitative data, increases flexibility, and improves both the validity and reliability of qualitative research (Salmona & Kaczynski, 2016). In this study, I used QDA Miner Lite (Provalis Research, 2020), a computer-assisted qualitative analysis software, to accurately analyze the textured data of the virtual interview scripts and researcher journal.

Ensuring the Quality of Procedures

To ensure the accuracy and credibility of procedures and prevent influence on participant responses, during the data collection process, I utilized member checks, triangulation methods, peer debriefing, and clarification of researcher bias. Additionally, reflexivity refers to the process where the researcher examines their assumptions and preconceptions and how these can influence research decisions and participants' responses (Reid, Brown, Smith, Cope, & Jamieson, 2018). For this study, I used interviews and observations as the primary data sources to explore teacher perception in Beach district about their implementation of Weimer's (2002) LCTT differentiated instructional model.

Member Checks

Member checks assist researchers with improving the overall accuracy, credibility, validity, and transferability of a study (Thomas, 2017). Through member checks, I was able to ensure that participants' responses during the interviews are accurately reported (Arora, 2017). I conducted member checks the week after data was collected by scheduling a 30-minute meeting with each participant. During the meeting, I provided each participant with a printed interview script, which they reviewed to check

for accuracy, ensure that the themes identified in the study are accurately represented, and return their responses to me for my review (Smith & McGannon, 2018).

Triangulation

Triangulation refers to the process where researchers use multiple data sources to develop a comprehensive understanding of the phenomenon being studied (Abdalla et al., 2018). In this study, I used two data checks in the form member checks and a researcher journal to test the validity of the data and triangulation. Each set of collected data was scrutinized so that the researcher can find evidence to support each theme identified (Renz et al., 2018). Once the evidence had been found, the data was then deemed accurate.

Peer Debriefing

Peer debriefing is a technique utilized by qualitative researchers to ensure that valid data are collected (McMahon & Winch, 2018). Peer debriefing requires the researcher to collaborate with one or more colleagues that hold impartial views of the study (Hadi & Closs, 2016). For this study, selection criteria for participants include educational professionals who have taught for at least seven years at the elementary level and have a strong background in DI. Three selected educational professionals who meet the criteria were invited to view the spreadsheets that consisted of the data that was compiled from the interviews and observations. Each of the educational professionals were asked to provide feedback on findings being grounded in the data, and if the identified or described themes are realistic. The educational professionals were also be asked to provide insights on researcher bias being present in any of the reported data and

provide suggestions that can be used to enhance the level of credibility in the study (Richards & Hemphill, 2018).

Clarifying Researcher Bias

Researcher bias occurs when researchers unintentionally influence the results or findings of their study to gain the desired outcome (Galdas, 2017). Though researchers may not be aware of their actions, such behaviors can affect the impartiality of the study and reduce the validity of the data that will be reported (Cypress, 2017). Qualitative researchers face the challenge of researcher bias on a larger scale compared to quantitative researchers because the experiences and judgments of the researcher are relied on (Pietilä et al., 2020). However, researcher bias can be avoided by ensuring that the guidelines of institutions are followed, and the study is planned early. Additionally, it is essential to identify what needs to be accomplished before data collection and keep detailed records of all the data that was collected. Methods that I employed to reduce researcher bias included utilizing member checks and peer debriefing. Having colleagues review the data that was collected to provide feedback and insights also enhanced the validity of the information being reported and reduces biases.

Discrepant Cases

Accurate reporting of discrepant cases will be verified through peer debriefing and member checks (Reierson et al., 2017). The process of triangulation will be used to ensure the accuracy and credibility of findings in the study to prevent any forms of discrepancy between data analysis methods. If I discover a difference, I will expand the participant selection. Researchers must be aware of contradictions and attempt to find

supportive evidence that challenges the information discovered in the literature review, interviews, and observations on how teacher perception affects the implementation of DI in the classroom (Monroy & González-Geraldo, 2018). This will involve looking at how each participant structures their practice, how they use DI in their class, and possibly expanding the pool of participants to other teachers than those who teach Grade 6. By going through this process of analyzing discrepancy, I was able to enhance the worth of this basic qualitative study as it relates to teacher perception affecting the use and implementation of the DI model (Bryman, 2017). For my study no data collected presented any information that challenged the insights gained, which was validated by member checks through participants verifying the transcripts of the interviews, use of peer debriefing, and summary of findings. All identified codes aligned with the themes that were discussed previously. Responses from participants were aligned with responses given by other participants. There was no emergence of discrepancies during my conducted analysis of the data.

Limitations

Limitations of a study are characteristics of design or methodology that can impact or influence the findings from the research (Queirós et al., 2017). This basic qualitative study was conducted in two elementary schools in the Beach School District and may not represent all elementary schools in neighboring districts – this is because each school is unique and will have varying needs. For this study, I selected 15 elementary school teachers, though small sample sizes can be viewed as a limitation due to the unique characteristics of the teachers and students involved (Morgado et al., 2018).

Another limitation of this study is that I used using the perspectives of Grade 6 Elementary teachers who have been teaching for 5-10 years. The exclusion of other grade teachers, prospective or new teachers, and not considering the perspectives of the administration could result in slightly different conclusions due to the teachers' years of experience in teaching. Additionally, this study was conducted during one term of the school calendar year, which does not consider the past and future experiences with the DI model that could provide additional insights into how perception plays a role in affecting how teachers implement and use DI in the elementary classroom.

Data Analysis Results

Qualitative research can allow researchers to make sense of reality, to describe and explain the social world and develop explanatory models and theories (Collins & Stockton, 2018). In qualitative analysis, researchers identify, examine, and interpret patterns and themes found in textual data to determine how these patterns and themes help to answer research questions (Locke et al., 2020). For this basic qualitative study, two methods of data collection were used: virtual teacher interviews and a researcher journal. To analyze this data, I used Watkins (2017) rigorous and accelerated data reduction (RADaR) technique that included (a) preparing and organizing the collected data, (b) reviewing and exploring the data, (c) opening coding, (d) reviewing those codes and revising or combing them into themes, and (e) cohesively presenting themes. I performed the five steps of the RADar technique three times to discover the themes in the sections that follow.

Findings

The problem in this study included that some elementary school teachers were inconsistently using DI as based on Weimer's LCTT. The data collected from virtual interviews during October and November provided insights into why the problem was occurring. The findings from this study have revealed concerns in both teacher knowledge of the model of DI and a variety of strategies that they can employ to cater to all student needs. Evidence from the research study included a 30-minute to 45-minute virtual interview, researcher journal, and a follow-up email from the 15 teacher participants. The research question from this study was the foundation for the study, what are teacher's perceptions about why they are inconsistently implementing Weimer's differentiated instructional model? After 4 cycles of coding using QDA Miner lite software, several themes emerged. The main themes that emerged from the research question were: (a) lack of planning time, (b) mental challenges of differentiating every lesson, (c) mixed abilities and learning in need of effective accommodation, (d) lack of assistance or support in the classroom, (e) lack of parental support, (f) hands-on resources limiting special needs students' progress and distracting them and negatively impacting their behavior, and (g) lack of differentiation in standardized tests (see Table 1).

Table 1

Alignment of Research Question and Themes

Research Question	Themes
What are teacher's perceptions about why they are inconsistently implementing Weimer's differentiated instructional model?	a). Lack of planning time. b). Mental challenges of differentiating every lesson c). Mixed abilities and learning in need of effective accommodation. d). Lack of assistance or support in the classroom. e). Lack of parental support. f). Hands-on resources limiting special needs students' progress and distracting them and negatively impacting their behavior. g). Lack of differentiation in standardized tests.

Table 1 illustrates the seven themes that emerged from the research question that were identified by teacher participants' virtual interviews. A description of the seven identified themes follows with justification as to how the teacher participants perceived their implementation of DI changes in their teaching practice and how their perception of the model of DI affects their consistent use of the model. Included in the descriptions are excerpts from the virtual interviews.

Theme 1: Lack of Planning Time

Ten out of the 15 teacher participants expressed that planning time is essential to be able to effectively differentiate lessons. A lack of planning time was expressed by all 15 participants as a major constraint that affected their consistent use of DI. Participant

TP9 stated that “differentiating lessons can be challenging if teachers are not provided with adequate planning time because to carry out DI you need time to effectively plan for students and it gets very difficult if that planning time is not built into the teacher’s schedule.” Participant TP15 conveyed that DI is very time consuming and stated that “because DI uses multiple strategies to assist each student to meet an objective, the process is rather slow.” She continued to explain that as a teacher in DI, students are the center of learning, you have the responsibility to create multiple worksheets, design multiple activities for students to engage in, utilize videos, hands-on activities, and different ways in which to implement those activities.” While differentiated instructional lessons take a lot of time and planning, participant TP1 acknowledged that this method benefits all students on a greater level by giving them responsibility for their learning and enhances their academic achievement.

Theme 2: Mental Challenges of Differentiating Every Lesson

As DI planning is time-consuming, it also demands a lot of mental effort from teachers. A differentiated instructional lesson meets all learners at their learning level or how best they can learn. Teachers are then responsible to plan activities and tasks that each student can be successful in based on their learning style or ability. Participant TP1 expressed that “she found it difficult to have every single lesson differentiated because she used a lot of manipulatives and hands-on materials.” Sometimes the school’s budget could not accommodate all of the requested supplies from every class teacher. She continued to state that “many times I had to purchase the resources or materials that I needed using my pay checks. Participant TP4 mentioned in her interview “that although a

lack of resources presented difficulties in preparations for consistent differentiated lessons, it is all worth it and rewarding because the kids are the ones that receive the blessings as they can achieve their true potential."

Theme 3: Mixed Abilities and Learning in Need of Effective Accommodation

Diverse or mixed ability students require multiple forms of accommodations per lesson and this challenges teachers with the responsibility of designing tasks and activities for each student in every lesson of the week. While the purpose of DI is to cater to all needs, when the learning gap is too wide teachers cannot effectively accommodate students, monitor their progress as each learner also moves at their own pace. Participant TP11 specified in her interview that "DI makes learning more accessible for students so that they are not set up with a failure task but are given something that they can do and as they become more accustomed, they can achieve objectives and this encourages them to try or attempt more in class." With this in mind, Participant TP11 goes on further to express that "differentiating lessons becomes a challenge when there is too wide of a learning gap in the classroom. She stated that currently in her Grade 6 class, learning levels range from Grade 2 to Grade 6 and above. She commented that "it is quite challenging to create tasks and activities when the gap is so vast." Participant TP11 mentioned that in her efforts to combat this challenge, she combines lower-level students with higher-level students – this allows students to work along with each other, building and relying on their strengths and capabilities while supporting one another as they complete tasks.

Theme 4: Lack of Assistance or Support in the Classroom

DI strategies afford teachers the ability to execute several different tasks or activities where students can all succeed or achieve an objective or goal. Realistically, having four or five different groups of students working on different tasks or activities can be difficult for one teacher or adult to monitor and ensure that effective learning is taking place. Some schools can employ Assistant Teachers or Special Support Aides that provide another adult in the classroom with the teacher and this effort dramatically promotes the proper implementation or execution of DI. Seven out of the 15 teacher participants shared that having another adult as support in their classrooms affords them the ability to execute DI on a larger scale. Participant TP6 stated that her learners do a lot of center work and "it is very important to have another adult working in the classroom because of their age, students need someone apart from the teacher to help them stay on their task, question them to support them and ensure that quality learning is taking place because if they are left on their own without guidance DI cannot be as effective." Similarly, Participant TP8 stated in her interview that "DI can be difficult at times especially if you are in a classroom all by yourself because it becomes very stressful trying to teach more than one group at times." She expressed that behavioral issues arise when you are alone and trying to differentiate a class." Participant TP13 reflected on inadequate support in the classroom hindering DI. He stated that "it is challenging to effectively execute DI when you do not have the support to ensure that 4 or 5 different groups of students are effectively learning." He also noted that in his 26 years of teaching

that the age or maturity of students plays an important factor in DI group work – it is easier to monitor groups of older students that can work independently."

Theme 5: Lack of Parental Support

Any other avenue that is new or freshly introduced may not always be accepted at first. Parents' buy-in to a new concept takes time and they require evidence that something new that educators are trying out is effective and helping their child. When parents are properly educated on the concept and method of DI, they can support the classroom teacher in their efforts to help students to learn and achieve greater heights. Two out of the 15 participants expressed that they found it difficult to differentiate their instruction consistently due to a lack of support from their students' parents. Participant TP9 mentioned in her interview that "a major barrier to consistent DI is when parents push back and have the idea that their child should not be receiving instruction that is lower or different from what their peers are doing." She went on to explain that when parents lack being educated on DI they are not as supportive because they feel their child is being treated differently from the rest of the class. Participant TP14 expressed also that not all parents appreciate the idea that their child is working at a different level or that they are not doing the same activity as the others in the class. She went on to describe that sometimes parents would call her or even come into school to question why their child was engaging in a hands-on approach and another student is completing paperwork. Her response to parents was that "your child is learning the same content but in a different way."

Theme 6: Hands-on Resources Limiting Special Needs Students' Progress and Distracting Them and Negatively Impacting Their Behavior.

DI utilizes multiple strategies that allow teachers to promote independent learning using their learning abilities at times behavioral issues arise from distractions. Many DI activities are designed with the students' interest or learning style in mind and one example uses hands-on activities or objects that students can touch to help learn a concept. Students that have special needs or behavioral issues tend to become easily distracted with the manipulatives or objects for learning, detracting away from their learning process and distracting other students around them. Two out of the 15 participants explained that while DI methods promote student learning, it also creates some hindrances. Participant TP3 expressed in his interview, that he experienced extreme difficulty differentiating consistently as a majority of his students were special needs. Participant TP3's students tended to become easily distracted with the manipulatives and he mentioned that he has to be very picky and careful with the use of manipulatives and hands-on activities for all subjects or lessons because it provides distractions for SEN and students that have low attention spans – detracting away from their learning process. Participant TP12 also expressed that "student behavior is affected by distractions, this is especially if you have different learning groups with more than 1 activity going on in the classroom, it can be challenging to balance the distractions and disruptions with the DI strategies."

Theme 7: Standardized Tests Are not Differentiated

DI intends to cater to students' needs to make learning and achieving content more accessible. Within the classroom lessons, DI promotes student learning and progress based on their ability but seems meaningless when standardized tests are not differentiated. Learning cannot be demonstrated on a generalized test by all students when their specific needs are not catered for or met. Participant TP2 expressed in her interview that she found it quite difficult to differentiate her lessons to help students achieve objectives based on their learning levels or abilities when at the end of the year students must complete a standardized examination where differentiation is not present. Regardless of ability, students are all expected to sit the same exam at the end of the school year. She also felt that this in a sense defeats the purpose of differentiation efforts and does not effectively cater to student needs and limits their ability to accurately demonstrate their learning at the end of the school year.

Interpretation of Findings

The purpose of this basic qualitative study was to explore teacher perceptions in Beach School District about their implementation of Weimer's LCTT differentiated instructional model within their classroom instruction. Data from virtual interviews were analyzed with the study's purpose and research question in mind. Seven themes emerged from the data and were discussed in the previous section: lack of planning time, mental challenges of differentiating every lesson, mixed abilities and learning in need of effective accommodation, lack of assistance or support in the classroom, lack of parental support, hands-on resources limiting special needs students' progress and distracting

them and negatively impacting their behavior, and lack of differentiation in standardized tests.

The study's findings reflected research about teacher's use of differentiated practices and revealed that while not consistent, teachers would benefit from additional strategies to support their consistent use of the model. It was also evident that while teacher participants recognized and used DI, the types of strategies employed currently seemed limited and repetitive. Teachers could benefit from some additional training on alternative DI strategies as well as how to effectively differentiate their instruction consistently.

Research Question

The research question focused on exploring teacher perceptions in Beach School District at the study site about their implementation of Weimer's (2002) differentiated instructional model. The data showed that nine out of the 15 participants had an idea of what DI is and attempted the same few strategies they knew to cater to the needs of their students. Two out of the 15 teacher participants were familiar with Weimer's (2002) LCTT. Eight out of the 15 participants expressed that they differentiated the content, process, and product of their lesson and many times gave students multiple avenues by which they could demonstrate their understanding. As a result, participants stated in their interviews that the process of DI becomes very challenging to use in every single lesson for various reasons which included a lack of provided resources, lack of planning time, and classroom support. Group work and centers are widely used by all 15 participants to encourage independent learning. Through this effort, students take ownership of their

learning and rely less on the teacher. Based on the study's findings, all 15 participants could benefit from training on learner-centered instructional strategies that support consistent DI in the classroom.

Section 3: The Project

Introduction

The project was based on the results from my qualitative study that addressed teacher perceptions in the Beach School District about their implementation of Weimer's LCTT differentiated instructional model in their classroom instruction. In this study, I collected data for analysis from interviews with 15 teachers about their perceptions of consistent DI in their practice. Section 3 includes an in-depth PD plan to address the concerns revealed in the data and to benefit teachers who need more training in DI and learner-centered strategies. The PD plan includes the (a) purpose, goals, and learning outcomes; (b) outlines and timelines; (c) implementation and evaluation plans; and (d) hour-by-hour details of the training. The PD product can be found in Appendix A. Section 3 also includes the rationale for the project; a review of literature based on the findings in the study; the project description, which includes the necessary resources and a proposal for implementation; a project evaluation plan for outcome measures that was used; and the project's possible social change implications.

The purpose of this project study was to explore teacher perceptions in the Beach School District about their implementation of Weimer's LCTT differentiated instructional model in their classroom instruction. For this basic qualitative study, I interviewed 15 teacher participants who had 5–10 years of teaching experience at the elementary level. The data analysis and findings revealed that nine out of the 15 participants had some knowledge of what DI is and attempted the same few strategies they knew to meet their students' needs. Two out of the 15 teacher participants were

familiar with Weimer's (2002) LCTT. Based on the data collected and a review of the current literature, I created a 3-day PD workshop that aligns with the needs of the Beach School District.

Description and Goals of Project

I designed a 3-day PD series (see Appendix A) to educate elementary teachers on DI and learner-centered instructional strategies to increase their consistent use in the classroom. Administrators such as the principal and assistant principal will be invited to attend the PD workshop. The purpose of the project was to provide elementary teachers at the Beach School District with additional DI strategies to use in their teaching to assist with their implementation of learner-centered instructional strategies. During the workshop, time will be set aside for collaboration and lesson plan development to create learner-centered lessons using DI. Time for collaboration and lesson plan development is critical to this PD series because the data show a need for both. The goals of these PD workshops are to engage participants in collaborative conversations about DI and learner-centered instructional strategies, reflect on examples of learner-centered instructional strategies, and create learner-centered lessons that use DI strategies and can be implemented in participants' classrooms. The overall goal of this PD workshop is to ensure that participants are prepared to implement learner-centered instruction and DI strategies consistently.

Rationale

DI is a learner-centered approach that enables teachers to maximize individual student growth by managing what students learn, how students learn, and how students

are assessed (Tunalı, 2019). Differentiation benefits students across the learning continuum, including students who are highly able and gifted and those students with learning disabilities and special needs (Gavish, 2017). After conducting interviews, I analyzed the data and identified seven emergent themes: (a) lack of planning time, (b) mental challenges of differentiating every lesson, (c) mixed abilities and learning in need of effective accommodation, (d) lack of assistance or support in the classroom, (e) lack of parental support, (f) hands-on resources limiting special needs students' progress and distracting them and negatively impacting their behavior, and (g) lack of differentiation in standardized tests. These findings were consistent with prior research about teachers' DI use in practice and revealed that while differentiation strategies are being used, they are limited and can be strengthened. Based on the themes that emerged from the data analysis, I decided a PD project would be the most appropriate extension of this study. The goal of this PD project is to increase teachers' knowledge of DI and learner-centered instructional strategies that support consistent DI in the classroom.

The purpose of this qualitative study was to explore teacher perceptions in Beach School District at the study site about their implementation of Weimer's (2002) differentiated instructional model. Although all 15 teacher participants mentioned having some knowledge of DI strategies that they use in the classroom, their responses indicating awareness of DI strategies were limited to basic strategies, and they did not have specific training in DI and learner-centered strategies, which was consistent with Hartwig and Schwabe's (2018) findings. Effective PD enables teachers to develop the knowledge and skills necessary to address students' learning challenges. PD is not effective unless it

causes teachers to improve their instruction or causes administrators to become better school leaders (Cilliers, et al., 2020). After participation in the 3-day PD workshop, each teacher participant will be equipped with more than the basic DI strategies they described during their interviews. The 3-day training consists of 1 day to explore DI strategies, 1 day collaborating with colleagues to develop or design a lesson plan on DI and learner-centered instructional strategies, and 1-day to role-play the lesson, evaluate their peers, and provide feedback on strengths and weaknesses (Motallebzadeh et al., 2017). The problem I sought to address in this study was that some elementary school teachers at the study site were inconsistently using DI as based on Weimer's LCTT. Data collected from the interviews with teachers at the study site indicated that participants experienced several barriers and constraints that caused their inconsistent use of DI.

Review of the Literature

In Section 1 of this basic qualitative study, I presented Weimer's (2002) LCTT of DI. The literature review in that section focused on DI, learner-centered teaching, and the advantages of employing LCTT. In this literature review, the focus was on effective PD training for teachers. I selected the following categories based on the data analysis results connected to the problem of the study: (a) content-specific training, (b) training based on the specific needs and voiced concerns of participants, (c) training format, and (d) outcomes and deliverables. Each of the categories provides support for the format and goals of the project as aligned with the purpose of the study.

The internet-based search engines and databases I used to conduct my scholarly search included: Academic Search Complete, Education Resource Information Center

(ERIC), EBSCOhost, and Google Scholar. Search terms connected to the literature search included *professional development, content-specific training, teacher collaboration, experiential learning, teacher training on differentiated instructional strategies,* and *professional development that develops teacher pedagogy.* Based on the data collected and the findings, I chose a PD project to address the problem identified in the study. I used Kolb's (1984) experiential learning theory, which focuses on a hands-on approach that places the learner at the center of the learning experience, to support the content of the project and guide its development.

Professional Development

PD improves and expands the knowledge and skills of educators to implement the best educational practices. PD facilitates individual, school-wide, and district-wide improvements to increase student achievement (Kennedy, 2016). According to Chao et al. (2017), teachers' learning through PD is most effective when they are provided a way to directly apply what they learn to their teaching. Research shows that PD leads to better instruction and improved student learning when it connects to the curriculum materials that teachers use, the district and state academic standards that guide their work, and the assessment and accountability measures that evaluate their success (Kenny et. al., 2020). Effective PD is focused on content, involves learning actively, promotes opportunities for collaboration, utilizes models of effective practice, provides coaching and support from experts, offers opportunities to engage in feedback and reflection, and allows adequate time to engage in such activities (Darling-Hammond et al., 2017).

Focus on Content

PD programs that focus primarily on improving teachers' content knowledge and their knowledge about content-specific pedagogy can produce significant gains in teachers' knowledge and enhance their practice and student learning. To be effective, PD must provide teachers with a way to directly apply what they learn to their teaching (Szelei et al., 2020). Research shows that PD leads to better instruction and improved student learning when it connects to the content or curriculum materials that teachers use, the district and state academic standards that guide their work, and the assessment and accountability measures that evaluate their success (Horton et al., 2017). For this PD project, I focused the content on the DI and learner-centered strategies that teachers can implement consistently in their practice.

Involvement in Learning Actively

Active learning provides learners the opportunity to reflect on their understanding by encouraging them to make connections between prior knowledge and new concepts. Often, active learning tasks ask learners to make their thinking explicit, which also allows their learning to be gauged (Virtanen et al., 2017). While many forms of active learning help teachers decipher concepts, theories, and research-based practices in teaching, modeling the new practice in PD activities has been shown to help teachers understand and apply a concept and remain open to adopting it (Kennedy, 2016). Active learning for teachers can be extended by peer observation of other colleagues, peer-to-peer, or team teaching as well as team planning of lessons (Niemi et al.,2016). The third day of the PD project I developed will allow teacher participants the opportunity to work with

colleagues to design a lesson that uses DI and learner-centered strategies. Teacher participants will role-play their created lesson plan and participate in an evaluation session that provides feedback on the strengths and weaknesses of the lesson.

Opportunities for Collaboration

When educators work together, they form important professional and personal bonds or relationships. Teachers often draw support from their colleagues and can delegate tasks that allow each teacher to feel effective. Consistent collaboration between teachers contributes to school improvement and student success (Miquel & Duran, 2017). In this PD workshop, the teacher participants will be given several opportunities to work with other teachers and interact with the leaders of the PD sessions.

Utilization of Models of Effective Practice

Guidelines or models of effective teaching are the specific instructional plans designed according to the learning theories. Effective teaching models provide a comprehensive design for the curriculum to plan instructional materials, develop lessons, clarify teacher-student roles, develop supporting aids, and so forth. For this study, teacher participants will be provided with detailed handouts with diagrams or graphics that explain various DI strategies and learner-centered strategies that can be applied to their lessons.

Support from Experts and Coaches

Coaching supports teachers to improve their capacity to reflect and apply their learning to their work with students and also in their work with each other. According to Kennedy (2017) when more personalized support is provided to teachers, coaching can

improve the classroom instruction students receive and can ensure that more students are taught by effective teachers and benefit from a high-quality education. For this project study, the trainers will actively listen, decipher needs, and then build capacity based on the strengths of teacher participants.

Engagement in Feedback and Reflection

When teachers engage in effective feedback and reflection, they can adapt and adjust their teaching to accommodate students' learning needs. Reflection enhances a teacher's personal development by leading to self-awareness. Ropohl and Rönnebeck (2019) stated for feedback to be effective, it should be aimed towards and capable of producing improvement in students' learning and can come from a teacher, facilitator, or someone taking a teaching role, or from peers or colleagues. For this project, teacher participants will be given opportunities to reflect on the lessons they designed and role-played and give feedback to colleagues on strengths and areas for improvement.

Adequate Time for Professional Development

Teachers need to be provided with a specific time to engage in newly acquired ideas and approaches, to reflect on their learning, systematically examine their practice, and explore methods of applying what they have learned. Research shows that effective professional development is embedded in teachers' everyday practice, with opportunities to apply new learning followed by self-reflection and feedback (Kenny et al., 2020). For this basic qualitative study, the professional development project will extend over a 3-day period where teacher participants will be given opportunities to learn new DI strategies, collaborate with colleagues to create a lesson and participate in a feedback and reflection

session. The project can be extended by administrators beyond the designed 3 days to support teacher learning and provide additional time for PD.

Experiential Learning Theory

Kolb (1984) stated in his research that experiential learning is a type of learning which can be described as "the process whereby knowledge is created through the transformation of experience." Knowledge then results from the combinations of grasping and transforming the experience. The experiential learning theory differs from cognitive and behavioral theories, in that cognitive theories emphasize the role of mental processes, while behavioral theories ignore the possible role of subjective experience in the learning process (Morris, 2020). The experiential learning theory proposed by Kolb (1984), takes a more holistic approach and emphasizes how experiences, including cognition, environmental factors, and emotions, influence the learning process. Learning by doing, is the basis for the experiential learning theory (Pojani et al., 2018). In experiential learning, teachers in the PD project will be learning things by having experiences and this will assist the teachers with retaining information and remember facts that can be applied to future situations.

Teacher Training on Differentiated Instructional Strategies

To successfully implement DI in our schools, school leaders must provide all teachers with encouragement, support, and nurturing—all delivered through effective PD that is founded on competent training and effective mentoring and that is conducted by experienced, skilled professionals. Tomlinson (2014) stated in her research that it was evident that first-year teachers were not adequately prepared to take on the vast

diverseness of the classroom with just their university backgrounds and internships. According to Yenmez and Özpinar, (2017), very little university preservice preparation reaches the classroom of the regular educator. University teacher programs educate novice teachers on the importance of DI; however, many teachers need additional help and PD support that demonstrates the incorporation of a variety of different instructional skills (Juma et al., 2017). With effective PD training offered to teachers on effective DI strategies and implementation, teachers will be able to effectively plan lessons, adapt their teaching methods to support differentiation, and provide suitable instructional activities that cater to a wide range of students.

Professional Development Develops Teacher Pedagogy

In education, PD-supported pedagogy is essential to improving the quality of teaching and the way students learn, helping them to gain a deeper grasp of fundamental material. PD enables teachers to focus on developing higher-order thinking and metacognition and make good use of dialogue and questioning to support student learning (Ader, 2019). According to Wilkinson et al. (2017), being an effective teacher involves seeking out multiple sites of input that can enable you to reflect on and improve the teaching and learning that takes place in your class. Jamil and Hamre (2018) stated in their research that teachers' pedagogy can be improved via PD that promotes self-reflection, solicited feedback from students or peers, dialogue with faculty, and peers. Through the 3-day PD project, teacher participants will be able to enrich their pedagogy as they experiment with a range of techniques, including whole-class and structured

group work, guided learning, and individual activities that enable students to engage in deeper learning.

Project Description

The PD project is a 3-day workshop based on the study's data collection from the 15 teacher participants. The purpose of this basic qualitative study was to explore teacher perceptions in the Beach School District about their implementation of Weimer's LCTT differentiated instructional model within their classroom instruction. The study's findings exhibited concerns in both teacher knowledge of the model of DI and the variety of strategies that could be employed to cater to all students' needs and revealed that DI strategies were limited and could be strengthened. Through the study, it was discovered that while teachers were using DI strategies in their classrooms, the types of strategies selected to be used were very limited and that teachers need more time and training, especially in the planning of lessons as well as strategies to support student learning while differentiating their instruction. The 3-day workshop will provide educators with an understanding of the research findings, strategies that support DI and learner-centered teaching in the classroom and increasing pedagogical content to support the consistent use of DI in their lesson planning and practice.

Resources and Existing Supports

The PD project will require resources and support from the Beach School District and two elementary schools where the workshop will take place. Administrative support is essential to the success of this PD venture. This PD project would be most effective during the week before school re-opening for the Fall, where teachers are provided with

several opportunities to participate in various forms of PD. Participants will include administrators, instructional specialists, and teachers. The following are other resources needed for the professional development workshop:

- School hall for the workshop including breakout session rooms
- Smartboard or interactive board
- Projector
- Internet access or Wi-Fi
- District's Curriculum Frameworks for individual subjects or by departments
- District's report cards
- District teacher lesson plan template
- Laptop
- PowerPoint presentation
- Pens, pencils, markers, sticky-notes, blank paper.

Potential Barriers

This PD 3-day workshop would occur during the week school opens for the Fall semester after the teachers return from their summer break. It is taken into consideration that the district and the school administration will have their own set of planned topics that they want to review and present to their teachers. A 3-day workshop training versus a full week of training could be more appealing to a school that has other PD to present to its teachers for the rest of the week. Also, the district now offers teachers the choice to choose when to complete their PD and this study's PD project can also occur either in the December PD days before Christmas Break or during the Spring semester break in April.

Proposal for Implementation and Timetable

To meet the commitments of the permission granted for this study, a copy of this study will be sent to the Department of Education Services and the Ministry of Education. The PD project will be sent as well as an appendix to the study. The district and study site will be presented with the findings of the study and the researcher will request permission to conduct the PD before the start of the Fall semester or during the Christmas or Spring Breaks as a form of PD for the school calendar year. The timetable (see Table 2) provides an outline of the daily workshop over 3 days. This agenda will give administrators the time they need to present their agendas to their faculty and staff, and 3 days could be an alternative form of a PD opportunity rather than the normal full week of training that teachers are used to.

Table 2

Daily Professional Development Timetable

Time	Activity Type	Location
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Introduction to DI and Learner-centered teaching activity	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	PowerPoint Presentation – Main Concept	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1	Science and Math Block Classrooms
11:15-12:15	Break-out Session 2	IT Labs Rooms 14 and 15
12:15-1:15	Lunch	Cafeteria (optional)
1:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session 3	IT Labs Rooms 14 and 15
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria
3:00-3:30	Presentation of Planned Lessons	Auditorium
3:30-4:00	Conclusions, Reflections, and Wrap-up	Auditorium

Roles and Responsibilities of Teacher Participants and Others

The project for this study was created to bring attention to the issues and concerns gathered in the data collected from this study and to provide educators with specific DI and learner-centered strategies to use in their classrooms to cater to the needs of their students. Administrators, instructional specialists, and teachers must work collaboratively to bring about the projected changes they expect to see in their school and with their students. As the trainer of this workshop, I will supervise the setup and implementation of the 3-day workshop. Instructional specialists will be available for the break-out sessions. The number of teacher participants will determine how breakout sessions will be divided. Seven groups will be utilized—five elementary teachers in each. The instructional specialists will oversee the breakout sessions along with the workshop trainer (myself).

The teacher participants will be expected to participate in this 3-day workshop, bringing an open mind and their classroom experiences. They will be expected to work together with colleagues to organize ways to strengthen their practice in the areas of DI and learner-centered strategies. The expectation from this 3-day PD project is that teachers will gain insights from the activities they participate in and apply the strategies learned back to their classrooms to apply to their instruction, planning, and classroom environment.

Administrators and instructional specialists are expected to participate in the workshop activities. As specified before, these specific people will help to facilitate the breakout sessions. It is expected that administrators and instructional specialists, will also

be expected to help with the implementation of instructional strategies, aid, and support for the teacher participants throughout the school calendar year.

Project Evaluation Plan

PD goals are focused on improving and increasing an individual's capabilities and competencies through access to learning and training opportunities in the workplace (Havea, & Mohanty, 2020). PD goals are intended to increase one's knowledge or skill set. The goals of this PD 3-day workshop are to provide teacher participants with an understanding of the model of DI, DI strategies, and learner-centered strategies that they can use consistently in their teaching practice to meet all learners' needs. Another goal of this project is to increase teachers' ability to adjust their instruction to meet the needs of their students using DI and learner-centered strategies. The assessments used in my PD project will be formative, summative, and goal-based (Gallardo, 2020). At the beginning of the first day of the PD, teachers will be required to complete a preassessment (see Appendix A) to determine their prior knowledge about the specific aspects of the content planned for the 3-day PD project on DI and learner-centered strategies and why these are important. Throughout the day, teachers will have numerous opportunities to provide the facilitator with feedback on the PD by posting questions, concerns, or praises on the virtual forum in Microsoft Teams. At the end of each day, the teachers will complete an exit ticket to determine what they learned that day on DI, learner-centered strategies or if there is a need for any topics covered to be repeated for clarification, strategies and/or concepts that were, or were not, helpful, and general information the teachers wish to share. At the end of the third day of the PD project, the teacher participants will be

required to complete a post-assessment (see Appendix A) which is like the preassessment (see Appendix A), that consists of a few extra questions that reflect on how they have improved their understanding of DI and learner-centered strategies so that they can consistently implement the strategies in their classroom. One of the primary goals of this PD project is to ensure teacher participants understand the model of DI, DI strategies, and learner-centered strategies. Evaluating this goal requires the facilitator to ensure the teacher's understanding throughout the PD workshop and to provide models of what different DI and learner-centered strategies would look like in the classroom. The facilitator will provide paradigms of the different ways to incorporate various DI strategies within lessons. Instructional specialists will be responsible for ensuring teachers are supported in their efforts in incorporating various DI strategies in their daily lessons throughout the school calendar year.

A second goal is gaining a clear and better understanding of learner-centered teaching. To evaluate this goal, the facilitator and the instructional specialists will review the different resources and ways teachers can use learner-centered techniques to plan their instruction. The facilitator will provide exemplars during the training and instructional specialists will monitor the implementation of learner-centered strategies in teacher instruction throughout the school year.

The last goal of PD is to help teachers to create lesson plans that utilize DI and learner-centered strategies that are tailored to meet the specific needs of the students in their classrooms. To evaluate this goal, instructional specialists will review the created lesson plans (Appendix C) teacher participants completed during the break-out sessions

that include examples of the DI and learner-centered strategies used to meet their students' needs. The instructional specialists will also work with the district's Senior Management Team and be accountable for monitoring created lesson plans throughout the school calendar year.

Key stakeholders for this project included teachers, administrators, and instructional specialists. These stakeholders will be provided with the outcomes of the PD evaluation as well as the end-of-year evaluation after school-wide implementation of instructional strategies used. Results of the evaluations will be communicated with the district to show the possible benefits of the PD, which can also be used in other schools in the state.

Project Implications

Implications of this 3-day PD training will provide the Department of Education Services and The Beach School District Ministry of Education with an outline to address the problems with the consistent implementation of DI strategies and assist educators to adjust their practice to cater to the needs of all students in their classroom. This project may ultimately help to provide classroom teachers with additional resources, DI strategies, and training to improve the consistent implementation of DI in the classroom and enhance the learning experiences of students. The PD was designed so that teachers, administrators, and other staff are provided with training on DI and learner-centered strategies to equip them with additional tools and skills to support the consistent use of DI in their teaching practice. The project addressed the study's data that there are teacher learning gaps in understanding of the model of differentiation, DI strategies, and learner-

centered strategies. The project provides stakeholders with numerous opportunities to work collaboratively with colleagues to gain insights on DI and learner-centered strategies, to create lesson plans that incorporate these strategies, time to role-play the created lessons, and time to participate in giving and or receiving effective feedback. Although this project was designed around the study site's data, this project can be utilized by neighboring school districts and/or schools in improving teacher's consistent implementation of DI. The learning activities in the project related to understanding different DI and learner-centered strategies can all be used in settings where improvements to teacher pedagogy and consistent use of differentiation need to be made.

Conclusion

In Section 3, the study's project was proposed and an analysis of the relationship between the experiential learning theory and research was examined to support the content of the project. The project was described, which included the intended purpose, specific goals, and the target audience. The project's elements, timeline, activities, facilitator notes, and module formats were also described. The implementation plan and evaluation plan were presented for the 3-day PD project. Lastly, Section 3 ended with implications for social change. In Section 4, I discuss the project's reflections and conclusions including the strengths and limitations of the proposed project, recommendations for alternative approaches, scholarship, reflection on the importance of the work, project development and evaluation, leadership and change, implications, applications and directions for future research, and conclusion.

Section 4: Reflections and Conclusions

Introduction

The purpose of this basic qualitative study was to explore teacher perceptions in the Beach School District about their implementation of Weimer's LCTT differentiated instructional model in their classroom instruction. I discovered that while teachers at the Beach School District were implementing a few DI strategies, their pedagogy (content knowledge) and practice in the area of DI and learner-centered strategies were quite limited and that teachers need more time and training, especially in the planning of lessons, as well as strategies to strengthen and support student learning while differentiating their instruction. Based on the findings, I designed a 3-day PD workshop that targeted teachers' pedagogical gap to assist teachers in gaining additional knowledge and practice with planning and incorporating DI and learner-centered teaching strategies into their practice. In this section, I discuss the strengths and limitations of my designed project. In addition, I also consider alternative approaches. I reflect on my growth as a scholar, researcher, and project developer from my involvement in this study. At the close of Section 4, I include recommendations for future research.

Project Strengths and Limitations

Strengths

A strength of this project was that it was designed to improve elementary teachers' pedagogical knowledge in DI and learner-centered strategies that they can apply to their lesson planning and instruction. This project study took into consideration that elementary teachers at the Beach School District were facing constraints that prevented

them from consistently implementing Weimer's (2002) LCTT model of DI. I designed this project based on the data that was collected during the study to meet the needs of the elementary teacher participants. Secondly, another strength of this project was that it provides an adequate time where teachers actively collaborate with colleagues to design and role play lessons. A third strength of this project was that teacher participants are provided with the opportunity to receive and give feedback on role-played lessons, which helpis them to learn how to improve their use of DI and learner-centered strategies. Finally, this project can be adapted or used by neighboring schools within the districts or states to improve teachers' consistent use of DI and learner-centered strategies to effectively design lessons that cater to all learners.

Limitations

The findings of this study reveal possible limitations. The first limitation was that the sample size or selection of participants was rather small to produce valid or precise results, making it difficult to identify significant relationships from the data (see Tondeur et al., 2017). Another limitation of this study was that the pool of participants had to be expanded to lower grade levels other than Grades 5 and 6 to get the 15 participants. A third limitation was the method of data collection. For this study, I conducted virtual interviews to gather information due to the COVID-19 pandemic and school closures, limiting thorough analyses of results (see Queirós et al., 2017). I acknowledged that data could have been gathered by classroom observations to see teachers' lessons and surveys.

Recommendations for Alternative Approaches

In this project study, the identified problem was that some elementary teachers were inconsistently using DI as based on Weimer's (2002) LCTT. I collected data via virtual interviews using Microsoft Teams due to school closures during the COVID-19 pandemic. Alternately, I could have designed a mixed methods approach that would have allowed me the opportunity to use an additional data collection method or instrument such as a survey for the teacher participants. The use of a survey could have provided additional insights into the study's problem and aided with more valid and precise results. In addition, the use of a survey could have provided crucial information on the participants' knowledge of Weimer's LCTT, DI, and how they determine which strategies to use to meet their students' needs. Surveys can increase and expand sample sizes to produce more valid data. The participant pool could also have been expanded to neighboring districts making relationships between the collected data easier to identify and analyze (Seixas et al., 2018).

Scholarship, Project Development and Evaluation, and Leadership and Change

Scholarship

Reflecting on my doctoral studies and the process of writing my capstone, I can honestly say that I have grown in several areas. This experience has enabled me to become a scholarly writer from the constructive feedback and support of my committee chair, second committee member, and university research reviewer. This project study has equipped me with skills that range from designing a research question, selecting appropriate methods of data collection that align with all components of the capstone,

analyzing data to identify themes, being able to effectively report my findings without bias, and designing a 3-day PD workshop to help teachers at the study site confront the identified problem. I now have a better understanding of what it takes to be an effective researcher, writer, or collator of research. The topic I chose was based on a recurring issue in the Beach School District. My study will help teachers to consistently differentiate their instruction and place the learner at the center to meet all their needs. I hope that my project study will serve to provide tools or a "bag of tricks" that teachers can use to improve their practice.

Project Development

The desire to gain additional knowledge to support me in making a difference in education were what propelled me to pursue my doctoral studies at Walden University. Due to living in a region that lacked literature or research support, my experience was unique as I was presented with the task of designing a study that was based on a local problem. Selecting my chosen topic was not difficult because the inconsistent use of DI is an issue that has extended into secondary schools where I currently teach. I felt that the needs of students entering high school were not being fully met and I wanted to find out what was occurring at the elementary level. Analysis of the data collected showed that elementary teachers at the Beach School District needed the training to improve and enhance their DI and learner-centered instructional strategies. From this discovery, I created a 3-day PD workshop to assist teachers with gaining additional knowledge, skills, techniques, and practice with designing lessons that used the DI and learner-centered strategies to meet student needs. I am confident that based on my experience with

designing this project. I will be able to create future PD opportunities that assist educators in improving their practice and student learning.

Leadership and Change

Through my education at Walden University, I have been inspired with insights on how to be an effective and active agent of social change. Although I have only been in the teaching profession for a decade, I have been provided with various occasions to serve as a leader. I have been a senior teacher for music in my district, department head for the Arts and Technology department, and currently serve as the Chair for the Music and Drama Curriculum Development Team. The leadership skills that I have gained have enabled me to apply greater critical thinking to my practice and lesson planning and to provide my department teachers with effective feedback to help them to differentiate their instruction to promote their students' success.

Analysis of Self as Scholar, Practitioner, and Project Developer

Scholar

The doctoral process has provided me with the skills to research literature to support my identified problem, create a study, and conduct research effectively. Throughout the research process, I have learned an abundance of information on how data determines significant change. I have grown to become an effective and scholarly writer. For this project study, I have learned how to identify a local problem, use the Walden Library and Educational Databases to find articles to support my chosen topic, create a research question that aligned with a suitable framework, chose an appropriate method of data collection, and conduct analyses of collected data.

My capstone experience has allowed me the opportunity to gain a deeper understanding of producing valid qualitative research results. My study was a basic qualitative study. I chose a basic qualitative study as my research design because it allowed me to generate an in-depth and multifaceted understanding of a real-life local problem (see Gammelgaard, 2017). The identified problem was relatable because students entering high school did not seem to have their needs met or lacked challenges in their education before high school. I enjoyed designing the interview questions for the interview protocol and had positive discussions with all participants in the study.

Practitioner

Based on my doctoral studies, I believe that as a practitioner of education, I have gained skills in effectively collecting data, analyzing data, and using analyses to make informed decisions about teacher's practice, student learning, and the reporting of findings. I identified a problem at the local level and decided that the most effective method of data collection would be interviewing to gather information to solve the identified problem. My doctoral studies have enabled me to practice more research and reading of articles to enhance my knowledge of educational issues that I am interested in learning more about and solving. The more I read, the more I learn, and this has helped me to support my research in this project and overall as a practitioner.

Project Developer

Before embarking on my doctoral studies, I had no prior experience with designing an entire workshop for PD spanning 3 days. In the past, I have led some sessions of PD on topics of interest, but they only lasted for 30-minutes to 45-minutes in

length. Through the creation of a 3-day PD workshop, I learned specific strategies to implement the workshop to engage participants and ensure that they receive the maximum skills I intended for the training to provide. I also learned how to integrate DI and learner-centered strategies so that teacher participants had the opportunity to practice designing and role-playing lessons through colleague collaboration. Most importantly, I learned how to use my scholarly and practitioner skills to design a 3-day PD workshop to improve teachers' consistent use of DI and learner-centered strategies in their practice.

Reflection on the Importance of the Work

As a Doctoral student at Walden University, I have developed into a scholar, practitioner, and project developer. My scholarly writing skills have been improved, molded, and I write more confidently based on the constant feedback and support from my committee chair, committee member, URR member, and the Walden Writing Center. As a Head of Department for the Arts and Technology Department, it is in my best interest that teachers are knowledgeable of Weimer's (2002) LCTT of DI, that they understand and consistently implement DI and learner-centered strategies into their classroom practice to reach all learners. When teachers effectively and consistently implement DI and learner-centered strategies into their practice students become more successful and independent learners (Doubet & Hockett, 2017). After conducting interviews and data analyses, I discovered that the teacher participants expressed that although they are aware of a few strategies they would welcome any additional training to improve their consistent implementation of DI and learner-centered strategies. I also discovered that for improvements to be made to teachers' practice and student learning,

changes need to be made from the top to the bottom. As a result, administrators will be included in the PD workshops would provide teachers with a greater support system and help to propel improvements in student learning and teacher's practice on a higher level.

Implications, Applications, and Directions for Future Research

This project has the potential to benefit elementary teachers consistently implementing DI and learner-centered strategies into their lessons. Modifications in instruction support the needs of all learners and enhance their independent learning experiences. This project has the potential to be extended or used as a guide for neighboring school districts on DI and learner-centered strategies which teachers can use consistently in their practice. It is important to note that schools other than the Beach School District may consist of learners that learn differently, and their learning styles or abilities should be considered before the implementation of this project.

This project was grounded on Weimer's (2002) research on the LCTT and model of DI and teaching. Her work combined with the research by Piaget (1936), Dewey and Dewey (1915), provided me with the theoretical background to conduct my study. The literature review conducted provided information to support the need to improve current elementary teachers' instruction to include more consistent DI and learner-centered strategies to meet the needs of their students.

Potential Impact on Social Change

The purpose of this basic qualitative study was to explore teacher perceptions in the Beach School District about their implementation of Weimer's LCTT of DI in their classroom instruction. Data collected from interviews provided insights into elementary

teachers' perceptions at the Beach School District and how they have limited knowledge of Weimer's (2002) LCTT model of DI and strategies to use consistently in their practice. I have discovered that the teacher participants in the study expressed the need to gain knowledge and support of DI and learner-centered strategies that they can implement in their classroom. Through the provision of a PD workshop to meet the needs of the teacher participants at the Beach School District, they will be better prepared to consistently implement DI and learner-centered use learner-centered strategies to meet the needs of the students in the classroom. This will bring enhancements to students' learning independence and teacher pedagogy - promoting positive social change.

Conclusion

The LCTT fosters learning in communication with teachers and other learners; taking students seriously as active participants in their learning and fosters transferable skills such as problem-solving, critical thinking, and reflective thinking (Cha & Ahn, 2020; Fuadet al., 2017). DI allows teachers to manage what students learn, how students learn, and how students are assessed. With flexibility, DI allows teachers to maximize individual growth in the course content (Smets, 2017). Therefore, it is essential that teachers at the elementary level consistently implement DI and learner-centered strategies to meet students' needs and help them develop into independent learners. The findings from analyses of collected data revealed that while teachers at the study site were using some DI strategies, their knowledge of DI and learner-centered strategies was limited and could be strengthened. The conducted interviews helped me to gain an understanding of the participants' knowledge of the LCTT and model of DI and how this knowledge

affects their consistent implementation. Improved teacher instruction in DI and learner-centered strategies, may impact students' independent learning experiences as their specific learning needs are met and this may transfer beyond their elementary learning to tertiary education.

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Appendix A: The Project

DIFFERENTIATED AND LEARNER-CENTERED STRATEGIES

PROFESSIONAL DEVELOPMENT

PURPOSE	The purpose of this 3-day Professional Development training is to provide educators with an understanding of the research findings, strategies that support DI and learner-centered teaching in the classroom, and increasing pedagogical content to support the consistent use of DI in their lesson planning and practice.
TARGET AUDIENCE	All elementary teachers at both schools in this study. The principals, school counsellors, and instructional coaches are urged to attend.
GOALS	The goals of this professional development workshop are to engage participants in collaborative conversations about DI and learner-centered instructional strategies, reflect on examples of learner-centered instructional strategies, and create learner-centered lessons that use DI strategies and can be used in participants' classrooms.

	The overall goal of this professional development workshop is to ensure that participants are prepared to implement learner-centered instruction and DI strategies consistently.
OBJECTIVES	The objectives for this project include: a. Teachers will understand Weimer's (2002) model of differentiated instruction. b. Teachers will understand various differentiated instructional and learner-centered strategies. c. Teachers will implement the differentiated instructional and learner-centered strategies into their lesson planning and teaching practice.
EVALUATION	Teacher participants will complete a pre-assessment to demonstrate their prior knowledge, a post-assessment at the end of the 3-day professional development sessions and exit cards will be completed at the end of each

	day to show what they have learned and allow them to voice any misunderstandings or concerns.
RESOURCES AND MATERIALS NEEDED	• School hall for the workshop including breakout session rooms Smartboard or interactive board • Projector • Participants need laptops • PowerPoint Presentation hardcopies for participants • Daily Timetable Handout • Internet access or Wi-Fi • District's Curriculum Frameworks for individual subjects or by departments • District's report cards • District teacher lesson plan template • PowerPoint presentation • Pens, Pencils, Markers, sticky-notes, blank paper

- Coffee, tea, fruit juices, pastries, buffet lunch catered by local restaurant, plates, cups, napkins

Differentiated and Learner-Centered Strategies 3-Day Professional Development PowerPoint Presentation with Facilitator Notes

Required materials: School hall for the workshop including breakout session rooms, Smartboard or interactive board, Projector, PowerPoint Presentation hardcopies for participants, Daily Timetable Handout, Internet access or Wi-Fi, District's Curriculum Frameworks for individual subjects or by departments, District's report cards, District teacher lesson plan template, PowerPoint presentation, Pens, Pencils, Markers, sticky-notes, blank paper.

Before the training commences, the facilitator will set out 5 tables that are grouped and labeled according to department (Math, English, Science, Arts and Technology, and Humanities). Each table will have Day 1's handouts for the introductory section, diagnostic assessment, and writing utensils.

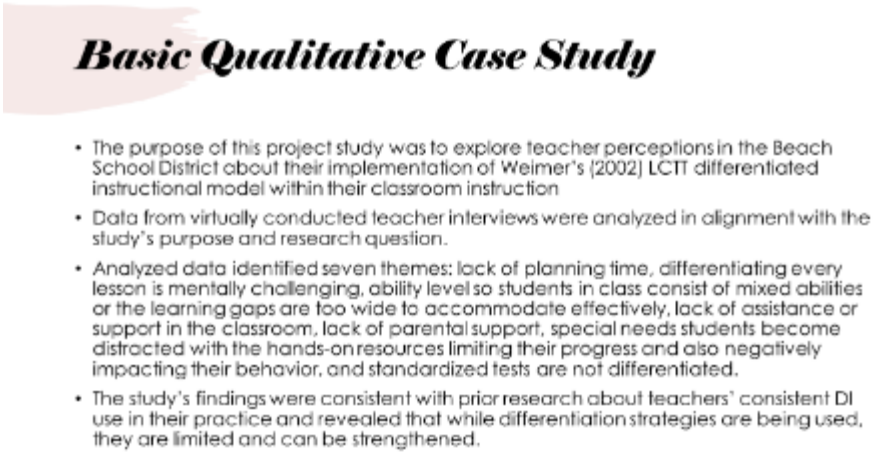
The sign-in sheet will be on a podium in the foyer of the auditorium.

Familiarize participants with professional development training and the intended purpose and goals over the next three days. It is important to highlight each goal's importance and connection with the overall intention of professional development training.

Review Day 1 schedule – handouts of timetable provided by each group's table. Ensure that participants are aware of the break-times, bathroom, and break-out session locations. Review the specific goal for the day. Day 1 will focus on the school's test data or reports, learning about differentiated instruction, and learner-centered instructional strategies. There are opportunities for questions during training. Break-out sessions involve participants grouped by departments where they will create a lesson plan to incorporate differentiated instruction using the tools from the session before. The day will end with an opportunity for each department to share their collaborated lesson plans and to review the insights gained from the professional development for the day.

Participants will answer 5 simple questions – provided on a handout at their tables. This is to inform the facilitator of any prior knowledge participants have on Differentiated

Instruction. At the end of the training, participants will have a chance to reflect on their learning for the day and assess insights gained.



Review the purpose and elaborate on the local problem of the basic qualitative study. Explain the process of data collection and findings or data results. Make connections between the data and the seven identified themes that were obtained from the data analysis. Connect to the goals of the professional development training.

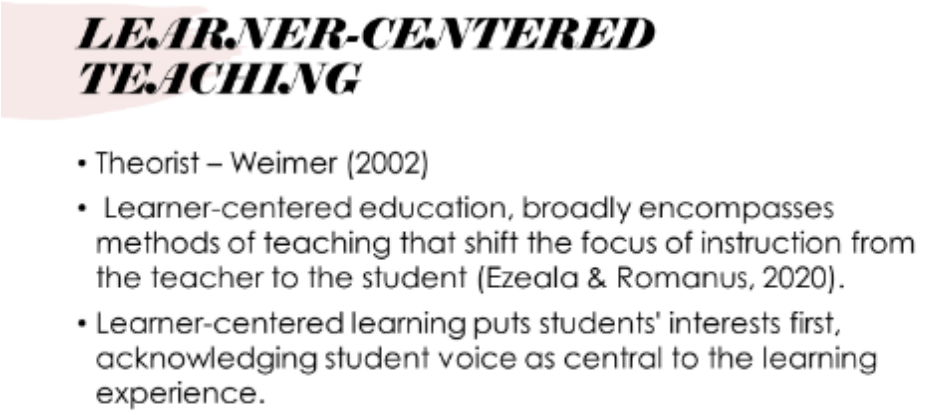
Understanding where students are currently performing is important for participants to assess where students should be. Each group or table will be provided with segments of students' reports that are related to their department or subject area (names of students will not be disclosed). Participants will be looking at how the progress of students is documented or calculated, as well as compare how students on the SEN registers or with IEP's performance are documented versus the high, middle, and low achieving students.

Participants will have 15 minutes to pose any questions, concerns reflecting on the information discussed. The facilitator may prompt participants with some questions and comments to get the discussion going.

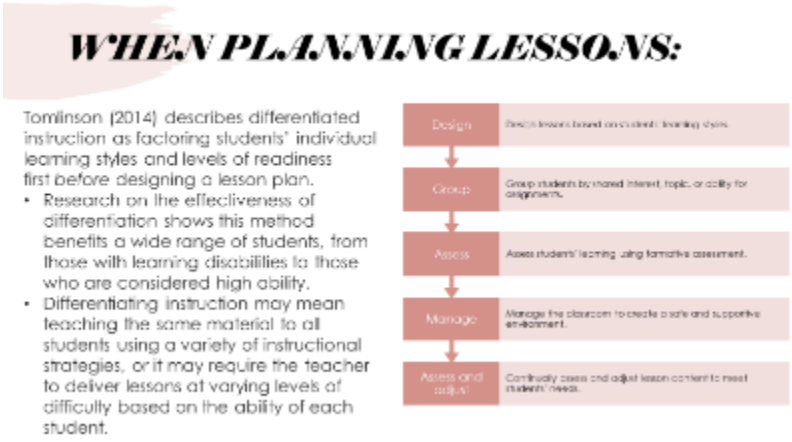
Refer to the diagnostic assessment that participants completed. Reflect on what they knew about Differentiated instruction as compared to the important bullets highlighted on

the slide.

Have participants view this short video on differentiated instruction. Once the video has ended have each group jot down some examples of differentiated instructional strategies that can be used in the classroom.



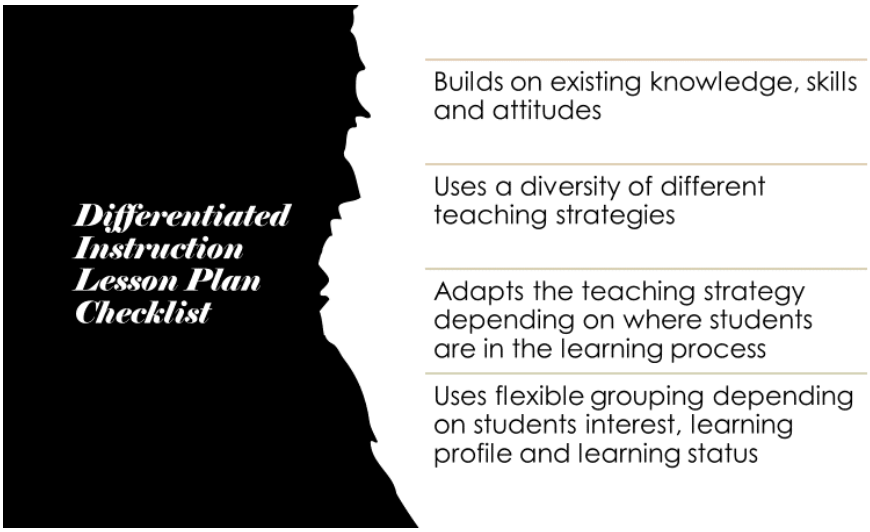
Review the important concepts of Learner-Centered Teaching. Connect these main points to differentiated instruction and the goals of Day 1.



It is important to know how to apply differentiated instructional and learner-centered teaching strategies to teacher practice and lesson planning. Provide these main points that teachers can use as a guideline to effectively incorporate both types of strategies and ensuring that they meet all the needs of their students. Have a small discussion with the entire group about some constraints that could hinder the incorporation of differentiated and learner-centered strategies.

There will be a 15-minute break where participants are free to use the bathroom, partake in provided pastries and juices.

Participants will be working in departments as specified on the slide in various classrooms to create a lesson that incorporates differentiated instruction. The facilitator has given each department the ability to select the topic and objective that they wish for students to complete – to provide the presentations later in the day with uniqueness and variance. The facilitator and specialists will be allocated in the assigned rooms to provide guidance and assistance if necessary. Remind participants to consider the learning profiles of the classes they select for their lesson, IEP's for SEN students as well. Each group will be expected to share their objective or learning intent, the specific strategies of differentiated instruction selected, and provide a rationale to support their choices.



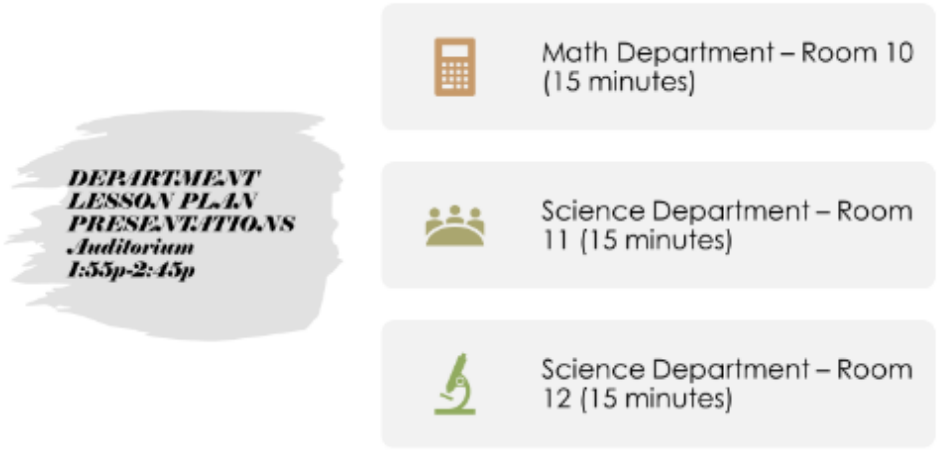
Remind participants to double-check that the created lesson has all the components of the checklist. Although planning differentiated lessons takes a toll on the time it is worth it when all students can succeed and learn effectively. Ask participants when they think is the best time to effectively plan with differentiated instruction? Should you do it alone? What are your thoughts?

Teachers will use the lesson plan format above to construct their lesson. For future references, it will be recommended that each participant write up a copy for their records.

Buffet lunch is provided in the cafeteria, however, if participants wish to get their lunch that is also an option.

Participants sign-in on the sign-in sheets located on the podium in the foyer of the auditorium.

Participants continue the planning of their differentiated lesson plans in their respective departments and prepare for their presentations.



The Math, English, and Science Departments will each be given 15 minutes to present their differentiated lesson plan.

There will be a 15-minute coffee break where participants will be allowed to use the bathroom, have some coffee, and stretch their legs.

Presentations continue. The Humanities and Arts and Technology departments will each be given 15 minutes to present their differentiated lesson plans.

Conclude Day 1's important aspects as related to the goal of the day. Have a discussion to provide each group the opportunity to feedback on their peers' lesson plans – discuss the strengths and weaknesses. Share Day2's goal. Have participants complete an exit ticket that sums up their learning for the day: "Describe something from today that you didn't know that you are now much clearer about concerning differentiated instruction?"

Time	Activity Type	Location
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Preassessment (Diagnostic) Learner-centered teaching. How much do you know?	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	Powerpoint Presentation – Examples of Learner-centered instructional Examples	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1 – Video and Reflect.	Science and Math Block Classrooms
11:15-12:15	Lunch	Cafeteria (optional)
12:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session – Create a lesson in departments that uses learner-centered instructional strategies.	Science and Math Block Classrooms
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria
3:00-3:30	Presentation of Planned Lessons	Auditorium
3:30-4:00	Conclusions, Reflections and Wrap-up	Auditorium

Professional Development Timetable Day 2

Goal 2: Have participants reflect on examples of learner-centered instructional strategies.

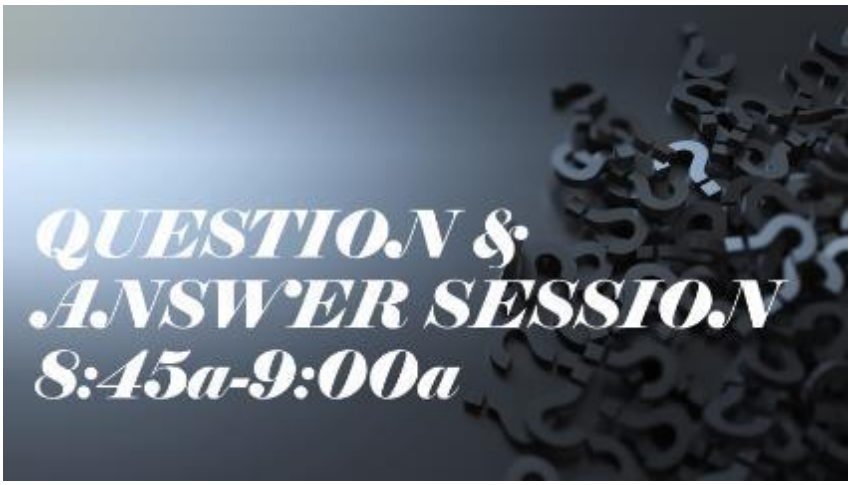
Review Day 2 schedule – handouts of timetable provided by each group's table. Ensure that participants are aware of the break-times, bathroom, and break-out session locations. Review the specific goal for the day. Day 2 will focus on participants' ability to reflect on examples of learner-centered instructional strategies and utilizing this knowledge to create a learner-centered lesson in their departments. There are opportunities for questions during training. Break-out sessions involve participants grouped by departments where they will create a lesson plan to incorporate learner-centered teaching strategies using the tools from the session before. The day will end with an opportunity for each department to share their collaborated lesson plans and to review the insights gained from the professional development for the day.

LEARNER-CENTERED TEACHING QUIZ – HOW MUCH DO YOU KNOW? 8:30a-8:45a

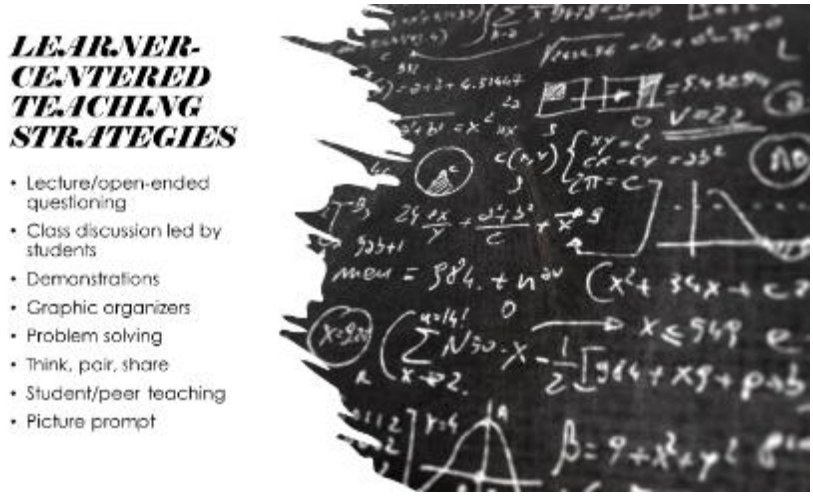
Click the link below to complete the simple online quiz on learner-centered teaching.

https://quizizz.com/join?gc=25877716

Participants will complete a virtual diagnostic assessment using Quizizz to determine their prior knowledge of learner-centered teaching and strategies.



Participants will have 15 minutes to pose any questions, concerns reflecting on the information discussed. The facilitator may prompt participants with some questions and comments to get the discussion going.

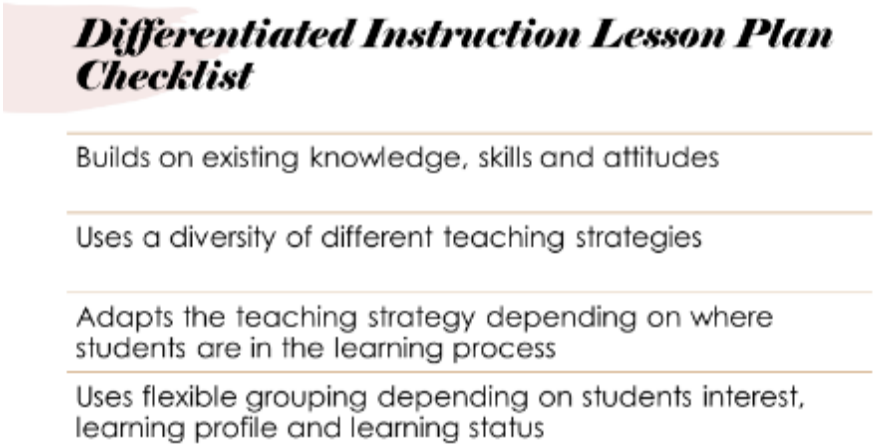


Discuss with participants that learner-centered teaching views learners as active agents. Students bring their knowledge, past experiences, education, and ideas - and this impacts how they take on board new information and learn. Learner-centered teaching strategies are designed to help students take control or ownership of their learning process. Have participants reflect on learner-centered strategies used in past lessons, how did students respond to the tasks? Were students able to complete tasks or assignments with ease?

Provide participants with insights on Weimer's (2002) learner-centered teaching theory and connections to the differentiated instructional model.

There will be a 15-minute break where participants are free to use the bathroom, partake in provided pastries and juices.

Participants will be working in departments as specified on the slide in various classrooms to create a lesson that incorporates learner-centered teaching strategies. First, each department will watch a short video on learner-centered teaching and discuss the various types of learner-centered strategies from the video that could be utilized to promote student learning in a lesson. The facilitator has given each department the ability to select the topic and objective that they wish for students to complete – to provide the presentations later in the day with uniqueness and variance. The facilitator and specialists will be allocated in the assigned rooms to provide guidance and assistance if necessary. Remind participants to consider the learning profiles of the classes they select for their lesson, IEP's for SEN students as well. Each group will be expected to share their objective or learning intent, the specific strategies of learner-centered teaching selected, and provide a rationale to support their choices.



Remind participants to double-check that the created lesson has all the components of the checklist. Although planning differentiated lessons takes a toll on the time it is worth it when all students can succeed and learn effectively. Ask participants when they think is

the best time to effectively plan with differentiated instruction? Should you do it alone? What are your thoughts?

LESSON PLAN FORMAT

Teacher:	Class:	Period:	Date:
Unit Title: Lesson Title:		Objectives:	
Learning Target(s):		Standards:	Materials Needed:
Vocabulary:			
Bell Ringer:			
LEARNING ACTIVITIES			
	Struggling	Proficient	Advanced
Activity or Goal(s):			
Starter			
Activity			
Check for Understanding			
Assessment: Formative/Summative			
Plenary/Exit Activity			
What differentiated instructional strategies were used?			
What learner-centered strategies were selected and why?			

Teachers will use the lesson plan format above to construct their lesson. For future references, it will be recommended that each participant write up a copy for their own.

LEARNER-CENTERED TEACHING VIDEO

Participants will be working in departments as specified on the slide in various classrooms to create a lesson that incorporates learner-centered teaching strategies. First, each department will watch a short video on learner-centered teaching and discuss the

various types of learner-centered strategies from the video that could be utilized to promote student learning in a lesson.

Buffet lunch is provided in the cafeteria, however, if participants wish to get their lunch that is also an option.

Participants sign-in on the sign-in sheets located on the podium in the foyer of the auditorium.

BREAK-OUT SESSION I CONTINUED 1:25p-1:55

In your assigned departments plan a lesson plan that incorporates learner-centered teaching strategies.

- Math Department – Room 10
- Science Department – Room 11
- Science Department – Room 12
- Humanities Department – Room 13
- Arts & Technology Department – Room 14

Participants continue the planning of their learner-centered teaching strategies lesson plans in their respective departments and prepare for their presentations.

DEPARTMENT LESSON PLAN PRESENTATIONS
Auditorium
1:55p-2:45p

Math Department – Room 10 (15 minutes)

Science Department – Room 11 (15 minutes)

Science Department – Room 12 (15 minutes)

The Math, English, and Science Departments will each be given 15 minutes to present their differentiated lesson plan.

There will be a 15-minute coffee break where participants will be allowed to use the bathroom, have some coffee, and stretch their legs.

Presentations continue. The Humanities and Arts and Technology departments will each be given 15 minutes to present their differentiated lesson plans.

Conclusions, Reflections and Wrap-up
Auditorium
3:30p-4:00p

- Feedback on Lesson presentations
- Wrap-up
- Exit Ticket

Conclude Day 2's important aspects as related to the goal of the day. Have a discussion to provide each group the opportunity to feedback on their peers' lesson plans – discuss the strengths and weaknesses. Share Day3's goal. Have participants complete an exit ticket that sums up their learning for the day: "Describe something from today that you didn't know that you are now much clearer about concerning learner-centered teaching and strategies?"

Time	Activity Type	Location
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Preassessment (Diagnostic) - WHAT DIFFERENTIATED STRATEGY IS BEING USED QUIZ	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	Powerpoint Presentation – Learner-centered Planning	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1 –.	Science and Math Block Classrooms
11:15-12:15	Lunch	Cafeteria (optional)
12:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session – Create and role play a lesson in departments that incorporates differentiated instruction and learner-centered instructional strategies.	Science and Math Block Classrooms
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria

Professional Development Timetable Day 3

Goal 3: Have participants create learner-centered lessons that use DI strategies and can be used in participants' classrooms.

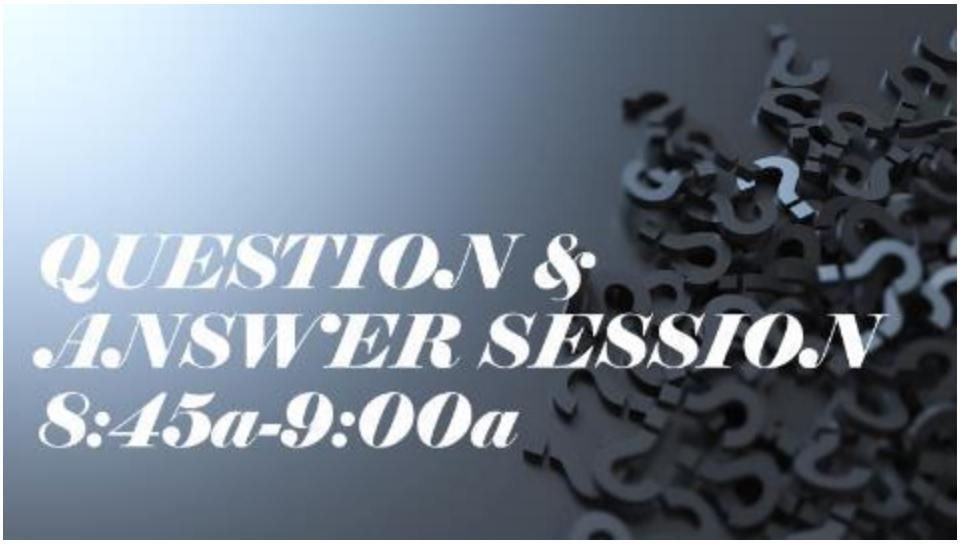
Review Day 3 schedule – handouts of timetable provided by each group's table. Ensure that participants are aware of the break-times, bathroom, and break-out session locations. Review the specific goal for the day. Day 3 will focus on participants being able to create learner-centered lessons that use differentiated instructional strategies. There are opportunities for questions during training. Break-out sessions involve participants grouped by departments where they will create a lesson plan to incorporate learner-centered teaching and differentiated strategies using the tools from the session before. The day will end with an opportunity for each department to role-play their collaborated lesson plans and to review the insights gained from the professional development for the day.

WHAT DIFFERENTIATED STRATEGY IS BEING USED QUIZ – 8:30a-8:45a

Click the link below to complete the simple online quiz on learner-centered teaching.

https://quizizz.com/admin/quiz/5f81a8179bd3e7001bcaf620

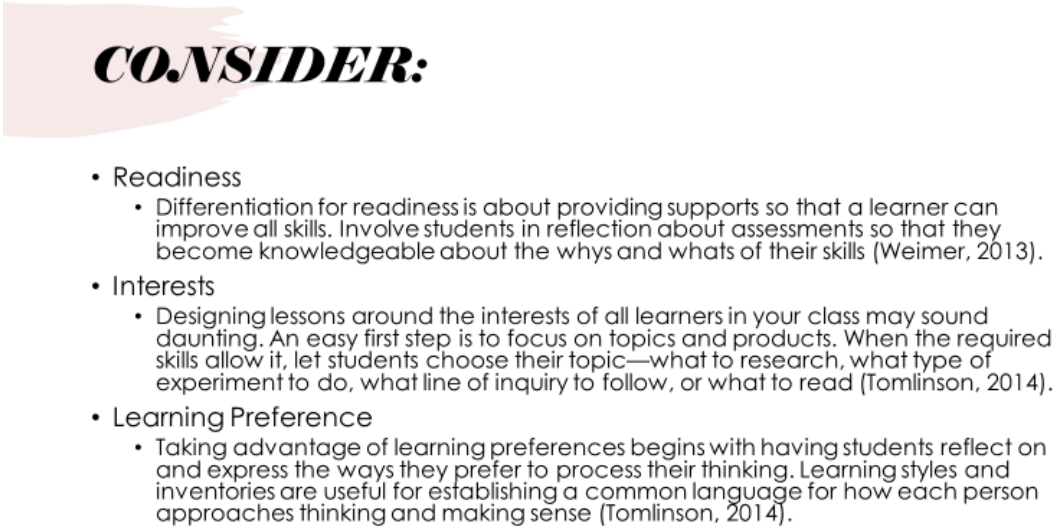
Participants will complete a virtual diagnostic assessment using Quizizz to determine their ability to identify a differentiated strategy being used.



Participants will have 15 minutes to pose any questions, concerns reflecting on the information discussed. The facilitator may prompt participants with some questions and comments to get the discussion going.

The main goal of learner-centered teaching and planning is to empower students to take ownership of what they learn by focusing on how the new knowledge solves a problem or adds value. Instead of simply pouring information over the child's mind, the facilitator presents the student with an issue and guides the class as they build a solution. Learner-centered teaching encourages students to reflect on what they are learning and how they

are learning it.



When teachers differentiate their instruction and lessons what are the most common aspects to consider? Have participants share their thoughts. Indeed, where a student currently is on the learning spectrum, things that they want to learn about, as well as how they wish to show their learning play a key role in determining student learning and success.

Provide participants with three major constructs to consider when differentiating learner-centered lessons – consider the students' readiness, interest, and learning preferences.

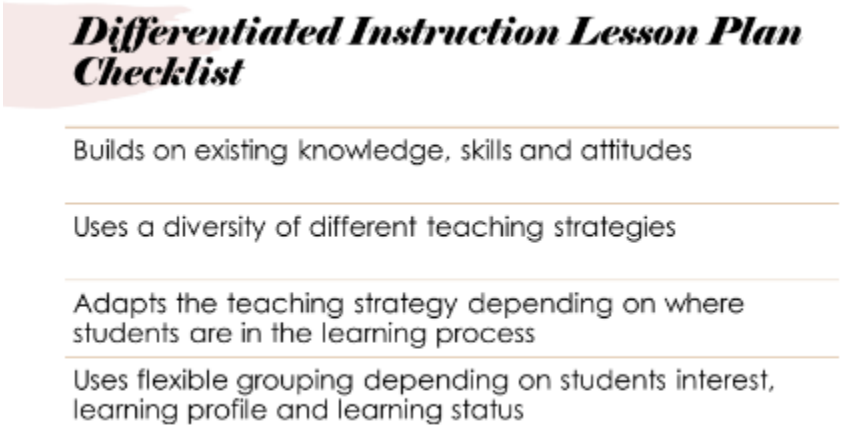
There will be a 15-minute break where participants are free to use the bathroom, partake in provided pastries and juices.

Participants will be working in departments as specified on the slide in various classrooms to create and role-play lesson that incorporates differentiated and learner-centered teaching strategies. The facilitator has given each department the ability to select the topic and objective that they wish for students to complete – to provide the presentations later in the day with uniqueness and variance. The facilitator and specialists will be allocated in the assigned rooms to provide guidance and assistance if necessary. Remind participants to consider the learning profiles of the classes they select for their lesson, IEP's for SEN students as well. Each group will be expected to share their objective or learning intent, the specific strategies of learner-centered teaching selected, and provide a rationale to support their choices.

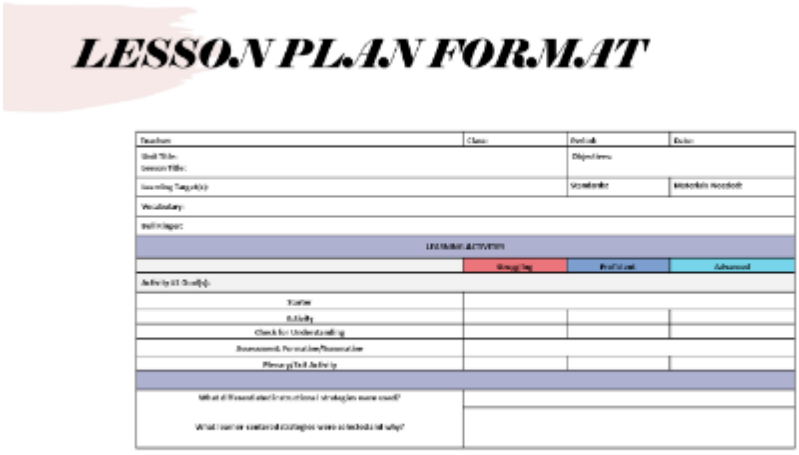
Buffet lunch is provided in the cafeteria, however, if participants wish to get their own lunch that is also an option.

Participants sign-in on the sign-in sheets located on the podium in the foyer of the auditorium.

Participants continue the planning of their learner-centered teaching strategies lesson plans in their respective departments and prepare for their presentations.



Remind participants to double-check that the created lesson has all the components of the checklist. Although planning differentiated lessons takes a toll on the time it is worth it when all students can succeed and learn effectively. Ask participants when they think is the best time to effectively plan with differentiated instruction? Should you do it alone? What are your thoughts?

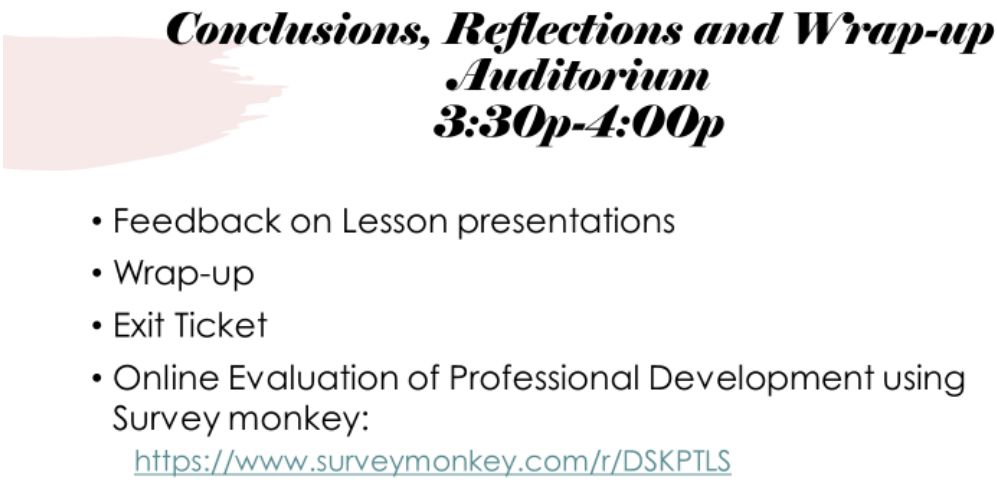


Teachers will use the lesson plan format above to construct their lesson. For future references, it will be recommended that each participant write up a copy for their own.

The Math, English, and Science Departments will each be given 15 minutes to present or role-play their created lesson plan.

There will be a 15-minute coffee break where participants will be allowed to use the bathroom, have some coffee, and stretch their legs.

Presentations continue. The Humanities and Arts and Technology departments will each be given 15 minutes to role-play their created lesson plans.



Conclude Day 3's important aspects as related to the goal of the day. Have a discussion to provide each group the opportunity to feedback on their peers' role -played lesson plans – discuss the strengths and weaknesses. Have participants complete an exit ticket that sums up their learning for the 3 days: "What have you gained from this 3-day professional development training?"

Evaluation

	STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE
The objectives for today's session were clearly stated.				
Today's session was aligned to its stated objectives				
Today's session was useful and practical.				
Today's session advanced the development of my leadership capacity.				
Today's activities (presentations, scenarios, group exercises, etc.) increased my capacity to use data to improve my practice.				
The facilitators of today's session effectively modeled appropriate instructional strategies.				
The facilitators of today's session incorporated our experiences into today's activities (presentations, scenarios, group exercises, etc.)				
Time was allocated effectively today to deepen my understanding of the presented material.				
There were opportunities during today's session to collaborate on shared activities.				
Today's activities (presentations, scenarios, group exercises, etc.) were relevant for my job-related needs.				
Today's sessions advanced my understanding of how to engage in a continuous improvement cycle.				
The organization of the learning environment (facilities, tools, materials, participant groupings, etc.) met my learning needs.				

Participants will complete an evaluation of the 3-day Professional Development training to provide the facilitator with feedback. They can either complete an online evaluation following the link on the slide or a provided paper evaluation.

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Differentiated and Learner-centered Strategies Professional Development

3-Day Training

Day 1

Focus: *Engage participants in collaborative conversations about DI and learner-centered instructional strategies.*

Time	*Activity Type*	*Location*
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Preassessment (Diagnostic) – What do you Know about Weimer's (2002) learner-centered teaching model of Differentiated Instruction?	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	PowerPoint Presentation – Differentiated Instruction and Learner-centered teaching	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1 – Design a lesson that uses DI and learner-centered strategies.	Science and Math Block Classrooms
11:15-12:15	Lunch	Cafeteria (optional)

12:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session Continued	Science and Math Block Classrooms
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria
3:00-3:30	Presentation of Planned Lessons	Auditorium
3:30-4:00	Conclusions, Reflections, and Wrap-up	Auditorium

Day 1 Handouts

DIFFERENTIATED INSTRUCTION

Definition: Differentiation is a process through which teachers enhance learning by matching student characteristics to instruction and assessment. Differentiation allows all students to access the same classroom curriculum by providing entry points, learning tasks, and outcomes that are tailored to students' needs. In a differentiated classroom, variance occurs in the way in which students gain access to the content being taught, the process by which they acquire information, and the manner in which they demonstrate understanding (Hall, Strangman, & Meyer, 2003).

STRATEGIES TO DIFFERENTIATE INSTRUCTION

	CONTENT	PROCESS	PRODUCT
WHAT IT IS?	• What the teacher plans to teach. • What the students need to learn.	• How the students will access the information. • Activities in which the students engage in order to make sense of or master the content.	• How the student will demonstrate what s/he has learned.
WHAT IT COULD LOOK LIKE:	• Determined through formative assessment • Using reading materials at varying readability levels • Putting text materials on tape/CD • Using spelling/vocab lists at readiness level of students • Presenting ideas through auditory, visual, kinesthetic, & tactile means • Using reading buddies • Flex grouping*** • Compacting • Meeting with small groups to reteach idea/skill, or to extend the thinking/skill • Multi-leveled questions • Modeling	• Tiered activities through which all learners work with the same information, understanding, & skills, but proceed with different levels of support, challenge, or complexity. • Centers/Stations • Developing personal agendas • Manipulatives • Varying the length of time a student may take to complete a task • Cubing • Learning logs or journals • Note-taking organizers • Graphic organizers • Highlighted materials • Jigsaw • Think, Pair, Share • Learning Menus • Webquests • Labs • Role Play / Simulations	• Choice boards • Podcast • Blog • Presentation • Quiz/Test • Using rubrics that match and extend students' varied skill levels. • Encouraging students to create their own product assignment as long as it contains required elements. • Enabling students to use contemporary media/technology as tools to demonstrate knowledge and understanding • See attached list for more options**

Source: (Figuerelli & Tsaoys, n.d.), Differentiated Instruction, p. 1.

What is differentiation?

Misconceptions and Truths

There is a wide range of definitions of and beliefs about differentiation, including misconceptions about what it is and is not. The table below shows some of these misconceptions, alongside corrective truths.

Portions adapted from Tomlinson (2014), Tomlinson, Narvaez, & Brimijoin (2008), and Doubet & Hockett (2015; 2017)

Misconception	Truth
Differentiation is new, or the latest educational fad.	Differentiation is as old as the craft of teaching and will never go out of style.
Differentiation is a set of strategies, tools, or teaching tricks.	Differentiation is a philosophy of and model for effective teaching and learning that goes beyond strategies.
Differentiation should happen every day, or differentiation should only happen once in a while.	Differentiation is a potential response to regular and ongoing analysis of students' characteristics and students' learning.
Differentiation requires writing individualized lesson plans for every student.	Differentiation calls for instructional adjustments that responds to *patterns* in student needs.
Differentiation doesn't allow for whole-class instruction.	Differentiation incorporates a range of instructional strategies, including whole-class instruction.
Differentiation relies on leveling students through ability grouping.	Differentiation relies on *flexible* grouping for a variety of community-building and instructional purposes.
Differentiation is giving some students low-level tasks and other students high-level tasks.	Differentiation calls for respectful tasks that respond to students' readiness, interest, and learning preferences.
Differentiation is better for (or easier in) some grade levels or subjects than others.	Differentiation is for all grade levels and subjects. Each subject and grade level presents unique opportunities for and challenges to planning for differentiation.
Differentiation lets some students out of standards.	Differentiation is the means by which all students make progress toward and beyond standards.
Differentiation is primarily an approach to teaching certain groups of students (e.g., students with individualized education programs (IEPs), English language learners, gifted students) or to teaching in special programs or settings.	Differentiation is necessary for teaching all students in all kinds of settings, including the general education classroom.
Differentiation is just another name for good teaching.	Differentiation is rooted in good teaching, but good teaching is not always differentiated.

Source: (Hockett, 2018), Differentiated Strategies and Examples: Grades 6-12, p. 5

DAY 1 Exit Ticket

In the space provided something from today that you didn't know that you are now much clearer about regarding differentiated instruction?"

Differentiated and Learner-Centered Strategies Professional Development

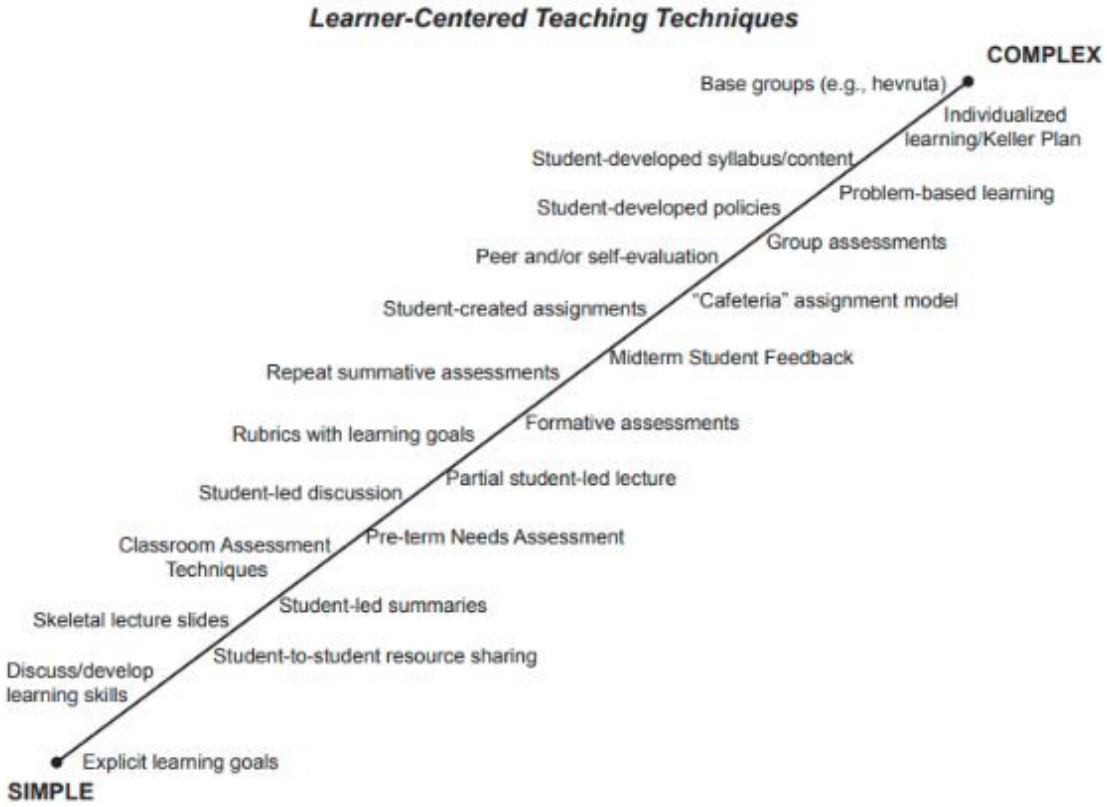
3-Day Training

Day 2

Focus: *Have participants reflect on examples of learner-centered instructional strategies.*

Time	Activity Type	Location
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Preassessment (Diagnostic) Learner-centered teaching. How much do you know?	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	PowerPoint Presentation – Examples of Learner-centered instructional Examples	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1 – Video and Reflect.	Science and Math Block Classrooms
11:15-12:15	Lunch	Cafeteria (optional)
12:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session – Create a lesson in departments that uses learner-centered instructional strategies.	Science and Math Block Classrooms
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria
3:00-3:30	Presentation of Planned Lessons	Auditorium
3:30-4:00	Conclusions, Reflections, and Wrap-up	Auditorium

Day 2 Handouts



Source: (Schram, 2017), Learner-centered Teaching Techniques, p. 1.

DAY 2 Exit Ticket

On a scale of 1 – 5 with 1 being not helpful to 5 being very helpful, rate how each of these activities helped you to learn how to implement differentiated and learner-centered strategies into your lesson planning.

1. Video and reflection on learner-centered strategies 1 2 3 4 5
2. Break-out session planning lessons with departments 1 2 3 4 5
3. Giving and receiving feedback on lessons 1 2 3 4 5

In the space provided below, describe something from today that you didn't know that you are now much clearer about regarding learner-centered teaching and strategies?"

Differentiated and Learner-centered Strategies Professional Development

3-Day Training

Day 3

Focus: *Have participants create learner-centered lessons that use DI strategies and can be used in participants' classrooms.*

Time	*Activity Type*	*Location*
8:00-8:30	Sign-in	School Auditorium Foyer
8:30-8:45	Preassessment (Diagnostic) - WHAT DIFFERENTIATED STRATEGY IS BEING USED QUIZ	Auditorium
8:45-9:00	Question and Answer Session	Auditorium
9:00-10:00	PowerPoint Presentation – Learner-centered Planning	Auditorium
10:00-10:15	Break	Cafeteria
10:15-11:15	Break-out Session1 –.	Science and Math Block Classrooms
11:15-12:15	Lunch	Cafeteria (optional)
12:15-1:25	Afternoon sign-in	School Auditorium Foyer
1:25-1:55	Break-out Session – Create and role-play a lesson in departments that incorporates differentiated instruction and learner-centered instructional strategies.	Science and Math Block Classrooms
1:55-2:45	Presentation of Planned Lessons	Auditorium
2:45-3:00	Coffee Break	Cafeteria

3:00-3:30	Presentation of Planned Lessons	Auditorium
3:30-4:00	Conclusions, Reflections, and Wrap-up	Auditorium

DIFFERENTIATED INSTRUCTION LESSON PLAN TEMPLATE

Teacher:	Class:	Period:	Date:
Unit Title: Lesson Title:		Objectives:	
Learning Target(s):		Standards:	Materials Needed:
Vocabulary:			
Bell Ringer:			
LEARNING ACTIVITIES			
	Struggling	Proficient	Advanced
Activity #1 Goal(s):			
Starter			
Activity			
Check for Understanding			
Assessment: Formative/Summative			
Plenary/Exit Activity			
What differentiated instructional strategies were used?			
What learner-centered strategies were selected and why?			

DIFFERENTIATED AND LEARNER-CENTERED STRATEGIES PROFESSIONAL DEVELOPMENT EVALUATION

School: _____ Date: _____	**Strongly Agree**	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
Content					
1. The objectives for today's session were evident.	☐	☐	☐	☐	☐
2. The PD training was in alignment with the objectives.	☐	☐	☐	☐	☐
3. The PD training was efficient and practical.	☐	☐	☐	☐	☐
4. The PD training promoted advanced development of my understanding of the model of DI and learner-centered teaching strategies.	☐	☐	☐	☐	☐
Process					
5. The PD activities (presentation, lesson planning, role-playing of lessons, etc.) increased my capacity to use DI and learner-centered strategies to improve my teaching and student learning.	☐	☐	☐	☐	☐
6. In the PD, facilitators effectively modeled appropriate instructional strategies.	☐	☐	☐	☐	☐
7. In the PD, facilitators incorporated our experiences into today's activities (presentations, lesson planning, role-playing of lessons, etc.)	☐	☐	☐	☐	☐
8. Time was allocated effectively today to	☐	☐	☐	☐	☐

deepen my understanding of the material presented.					

Context

9. In the PD, numerous opportunities were scheduled to promote collaborative work.	☐	☐	☐	☐	☐
10. The PD training (presentations, lesson planning, role-playing of lessons, etc.) was relevant to my profession.	☐	☐	☐	☐	☐
11. The PD training advanced my understanding of how Weimer's (2002) LCTT model of DI can be used to advance student learning and success.	☐	☐	☐	☐	☐

Comments

PROFESSIONAL DEVELOPMENT EVALUATION LEARNING FORM	
Topic: _____ Date: _____ Position: _____ Grade/Content Area: _____	
I learned …	
What as most helpful …	**I found the following to be least helpful …**
I am interested in knowing more about . . .	**Additional queries. . .**

PROFESSIONAL DEVELOPMENT – EVALUATION QUESTIONS (3 QUESTIONS)
Date_____

Respond to one of the following questions.

1. Out of all the information and insights learned in today's session, describe one you found to be most valuable.

OR

2. Did you learn any new information in today's PD session that were unanticipated? Why?

OR

3. Based on your experience with this PD training, what will you take away and apply to your practice? Why?

PROFESSIONAL DEVELOPMENT QUESTIONNAIRE

Session Title: _____ Date: _____

Name/Group _____

Instructions: Please rate each item from "Poor" to "Excellent" If the statement is not relevant, you may leave it blank. **Poor** **Excellent**					
1. Were the objectives of the session well-defined?	[1]	[2]	[3]	[4]	[5]
2. How useful were the leaders' instructional skills?	[1]	[2]	[3]	[4]	[5]
3. How useful was the session in holding your interest and attention?	[1]	[2]	[3]	[4]	[5]
4. Were the facilities favorable to learning?	[1]	[2]	[3]	[4]	[5]
5. Were your queries and concerns addressed?	[1]	[2]	[3]	[4]	[5]
6. How useful will the insights gained from the PD assist with helping you to make significant improvements to student learning	[1]	[2]	[3]	[4]	[5]
7. Please rate the overall value of this PD.	[1]	[2]	[3]	[4]	[5]
8. The information from this PD is extremely useful.	[1]	[2]	[3]	[4]	[5]

9. Please describe any positive aspects of this PD.

_____

_____

_____

_____

10. Do you have any suggestions on how we can improve this PD?

_____

_____

_____

11. For future sessions, please list topics that you are interested in gaining additional information and training in.

Appendix B: Permission to Conduct Study Letter

Permission to Conduct Study

Date:
Mr. Q
Principal
Beach School District Schools
Beach Island, Caribbean

RE: Permission to Conduct Research Study

Dear Mr. Q:

I am writing to request permission to conduct a research study at two of the elementary institutions in the Beach School District. I am currently enrolled in the EdD Doctoral program at Walden University, MN, and am in the process of writing my project study. The study is entitled "Differentiated Instruction and Improving Elementary Student Learning."

I hope that the school administration will allow me to recruit 15 teachers across both elementary schools to complete a 30 minute to a 45-minute virtual interview anonymously. Interested teachers, who volunteer to participate, will be given a consent form that is to be signed and returned via email to the primary researcher at the beginning of the survey process.

If approval is granted, I would like to request that teacher participants complete the virtual interview outside of school hours, such as between 4:00 p.m. and 7:00 p.m., using Zoom or Microsoft Teams. The times will be scheduled with each participant once permission is gained.

The information from the virtual interviews will be pooled for the project study, and the individual results of this study will remain confidential and anonymous. Should this study be published, only combined effects will be documented. No costs will be incurred by either your school/center or the individual participants.

Your approval to conduct this study will be much appreciated. I will follow up with a telephone call next week and would be happy to answer any questions or concerns that you may have at that time. You may contact me at my email address: kasandra.scott@waldenu.edu.

If you agree, kindly sign below and return a scanned signed form to my email address above. Alternatively, kindly submit a signed letter of permission on your institution's letterhead, acknowledging your consent and authorization for me to conduct this survey/study at your institution via email.

Sincerely,

Kasandra Scott

Doctoral Student at Walden University

_____

Print your name and title here

Signature : _____

Date : _____

Appendix C**:** Interview Protocol

Date:

Time:

Location:

Interviewer:

Participant Code:

Firstly, I would like to thank you for your voluntary participation in this study. The purpose of this basic qualitative study is to explore teacher perceptions in the Beach district about their Weimer's (2002) LCTT differentiated instructional model in their teaching practice. Therefore, I would like to interview you. The duration of the interview will be between 30 minutes to 45 minutes. All of the information gathered from this interview will be kept confidential. For information accuracy with your consent, this interview will be audio-recorded, and the written script will be provided for your review. Your identity will not be revealed at any part of this research project. I will be conducting the same interview with 14 additional elementary teachers between the two Beach District Schools.

Interview questions:

1. Are you familiar with Weimer's (2002) learner-centered teaching theory? What do you know about this theory?
2. What can you tell me about the model of differentiated instruction?

3. Would you describe your use of differentiated instruction as being consistent? Is every lesson designed with DI?
4. Do you consider the DI model when planning your yearly units and daily lesson plans?
5. Can you share specific strategies you utilize to ensure that your lessons are differentiated?
6. How do your understanding of Weimer's (2002) LCTT and differentiated instruction assist you in implementing the model in your classroom?
7. Are the selected strategies enhancing students' learning?
    a. Are all the students' needs being met?
    b. What evidence do you have to support this?
8. How do you determine what specific method of DI to utilize in your practice?
9. How do you know if the selected methods of DI assist or hinder students' learning?
    a. Do you assess if your selected strategies of DI are compatible with students' level of learning and styles?
10. Can you describe a lesson you taught that incorporated DI strategies? Why you chose those specific strategies for that particular lesson and if these strategies were effective?
11. How has your teaching practice changed now that you are into the method of implementing DI in your daily lessons?
    a. Has student learning changed due to your implementation of DI?

b. If so, how?

12. Were there any constraints that you experienced by implementing DI in your practice?
13. Did you face any barriers that might have hindered your use of DI?
    a. If so, what were they?
    b. How did you combat or overcome them?
14. Do you have any suggestions for teachers considering using Weimer's (2002) LCTT of DI in their practice?
15. Would you like to add any additional information or insights?

Thank you for participating in this interview and project study.

To gather more or additional insights, I will utilize the following follow-up questions:

a. Can you elaborate…..

b. Can you explain why you decided to go with this method over another…? Provide an example

Appendix D: Researcher Journal

RESEARCHER JOURNAL

RESEARCHER JOURNAL FOR RESEARCH CONDUCTED AT BEACH SCHOOL DISTRICT ELEMENTARY SCHOOLS
Date: Site: Participant Code:
Summary:
Narrative: