Fall 11-22-2019

Meeting Gifted Students' Classroom Needs: A Phenomenological Study on Teachers' Needs in Order to Effectively Implement Differentiated Instruction in the Classroom

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Dissertation submitted to the Faculty of the College of Education

in partial fulfillment of the requirements for the degree of

Doctor of Education in

Teacher Leadership

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Concordia University–Portland

2019

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Abstract

There are a wide variety of learners in each classroom. Students have different needs, learning styles, motivations, strengths, and weaknesses. Gifted and talented learners are often those students who understand the concept being taught before any other student; they are the ones whose brains are constantly working, sometimes solving a problem differently than anyone else. The problem addressed was that gifted learners are not typically given the opportunity to expand their knowledge and skills. Instead, they are taught as a whole class with the rest of the students. The goal of this qualitative phenomenological study was to identify the ways teachers effectively differentiate instruction for the gifted learners in the classroom, and what factors inhibit teachers from using differentiation in the classroom. In addition, participants discussed professional development opportunities and resources they felt they could benefit from to improve the quality of differentiation for the gifted learners. In this qualitative phenomenological study, 17 teachers in grades three through five were individually interviewed. The results from this study provide suggestions for successfully differentiating instruction in the classroom for the gifted learners, as well as areas of improvement that could take place in the district to better meet the needs of these students.

Keywords: gifted education, differentiating instruction, high-ability learners, gifted learners

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Dedication

For my family: Mike, Mikie, Alex, Tyler, Caitlyn, Stacy, Brittany, and William.

This dream coming true would not have been possible without the endless support of all of you. You all continually show me your love, encouragement, and support. I could not have accomplished this goal without you. I love you all!

Acknowledgements

This all started as a childhood goal: To one day become a doctor. I want to thank all the people who believed in me and supported me along the way: My husband, who saw my desire to keep learning and encouraged me to start the doctoral program. My children, who were my cheerleaders along the way, sat next to me while I worked, stayed up late to play with the babies while I typed, and gave me hugs when I needed them the most. My parents, who saved my cap and gown for when I graduated with my doctorate, and always asked how my schooling was going. My friends and colleagues who encouraged me, supported my learning, and asked what they could do help along the way. And, my Concordia University committee members: Thank you to Dr. Kamm for serving as my faculty chair, for always answering my questions, giving me feedback, allowing me to grow and self-reflect, and being there to help me achieve my goal. And, thank you to Dr. Becker and Dr. Voelkel for taking their time to read and give me feedback to make my work better. I am humbled by everyone's support. I am truly appreciative. Thank you so very much!

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Chapter 1: Introduction

Introduction to the Problem

In classrooms around the world, students have different needs, strengths, weaknesses, motivations, and learning styles. Gifted and talented students are often the students who sit in a classroom bored because their minds are constantly thinking and are already ahead of the teacher with the content. As a result, a teacher lecturing to the whole class is not the best fit for gifted and talented students (Chien, 2015). Instead, varying classroom instruction through differentiation will help meet the needs of these gifted and talented thinkers (Brevik, Gunnulfsen, & Renzulli, 2018).

In order to accomplish differentiation, teachers require professional development opportunities focusing on differentiated instruction strategies, training on its practical applications, and meeting the needs of the gifted and talented students (Chu & Meyers, 2015). When teachers make a focused effort to get to know their students' interests, strengths and weaknesses, a higher level of performance can be expected in the classroom (Watts-Taffe et al., 2013). In order to become acquainted with each student, an interest inventory could be given to each gifted student, and then the teacher would analyze the student survey before sitting down with his/her team to discuss effective strategies for meeting the needs for each student (Cha & Ahn, 2014). There must be an educational plan put into place to meet the needs of the gifted and talented students. When programs are built without parameters, with no identification criteria, goals for excellence, or plans for curricular extension or acceleration, then the minds of the high-ability students are not challenged, and the sustainability of these programs is inhibited (Dimitriadis, 2016).

Background, Context, History, and Conceptual Framework for the Problem

Although teachers generally understand the need for differentiated instruction in the classroom, many still do not put it into practice (Cha & Ahn, 2014). There are several reasons for this. One reason is that these teachers do not have the necessary professional development in the area of gifted education (Dimitriadis, 2016). They understand that there are different types of thinkers, but they do not know how to best meet the needs of gifted and talented students (Brevik et al., 2018). Another pitfall to gifted education, and differentiating instruction for gifted and talented students, is that teachers are not given enough time to collaborate (Chien, 2015).

There are similar problems with the implementation of gifted education in various countries around the world. In the Netherlands, guidelines for effective gifted education are currently being established, more specifically, there are several problems that are being addressed involving their lack of gifted education programs (DeBoer, Minnaert, & Kamphof, 2013). Some schools do not identify gifted students at all, and some teachers are unwilling to accommodate the needs of these high-ability learners in their classrooms, claiming that high-ability learners do not need the extra attention placed on them because they already have possibilities due to their intelligence. On the contrary, in some schools, individual teachers have taken on creating and establishing gifted and talented programs. However, these programs are inconsistent and considered not rigorous enough to meet the academic needs of the gifted students. Through studies and findings completed by the government, it was concluded that there was a general lack of vision in the Netherlands regarding gifted education. There were many parts of gifted education that needed to be addressed including: development of school policy, professional development for teachers, and guidelines for creating enrichment materials (DeBoer, Minnaert, & Kamphof, 2013).

In Turkey, gifted and talented education has also faced challenges (Kahveci & Akgul, 2014). The first challenge is a lack of resources and programs to challenge the high-level thinkers. The second challenge is the number of properly trained teachers in gifted education. Like the United States, there is a continued absence of challenge for gifted and high-ability students, and the effects of differentiation, acceleration, and enrichment must be researched (Kahveci & Akgul, 2014). Although there are some challenges in meeting the needs of the gifted students in Turkey, there is one strategy that is working. The integrated curriculum model (ICM) is an instructional strategy that requires gifted students to use reasoning, inquiry, and problem-solving skills through the study of in-depth investigations. This model has been effective in Turkey because it allows gifted learners to work with advanced content, process information in order to create a high-level final product, and connect the content and curriculum together (interdisciplinary studies). Educators from the United States could study and learn this model, and then integrate it into their classrooms to connect real-world problem-solving situations to the content and curriculum standards being taught in classrooms today.

Vygotsky's (1978) social constructivist theory, and Gardner's theory of multiple intelligences are two theories that build the conceptual framework for the problem. In Vygotsky's (1978) social constructivist theory, learning is an active process. For education to be valued and learning opportunities to be maximized, students need to experience a meaning-making process. Instead of being given information and then required to memorize it, students need to become part of the learning process. When learners become a part of the learning process, they are no longer acquiring the information through lecture and worksheets; instead, students discover the knowledge through hands-on experiences. Thus, a deeper understanding and motivation to learn is achieved (Derry, 2013). As a result, classrooms become more student-

centered, and teachers become facilitators of the classroom during this learning process (Keith, 2015).

In Gardner's theory of multiple intelligences, students learn differently from each other, and each person's mind works in different ways (Gardner, 1999). Some students are logical-mathematical thinkers, while others are linguistic learners. Some students are bodily-kinesthetic learners and must get up and move, while others are spatial learners or musical learners. Some students learn better working with others (interpersonally), and some students learn better working by themselves (intrapersonally). Some students have a special connection with nature, while other students have a connection existentially about what happens in the next phase of life. Gardner (1999) explained that when students are encouraged to explore creatively, they can truly show what they know and their mastery of the content. In the classroom, teachers are encouraged to get to know their students and their learning strengths. When this connection between student and teacher is made, then the teachers can use this knowledge when preparing lessons for their students.

Statement of the Problem

The problem addressed in this study was that in the typical elementary school classrooms, gifted learners are not given the opportunity to expand their knowledge and skills through "depth, breadth, pace, and complexity of content" (Scott, 2014, p. 164). Gifted and talented students should be receiving differentiated instruction, with teachers varying their level of instruction, offering experiences for students to excel when showing proficiency, and varying types of assessment (Watts-Taffe et al., 2013). Teachers have not received the necessary professional development training to meet the needs of gifted and talented learners (Schmitt & Goebel, 2015).

According to Chien (2015), three top reasons teachers were reluctant to differentiate were because they lacked the knowledge, skills, and resources in adapting materials to meet the students' needs. Unfortunately, teachers lack the training to effectively accommodate for academic diversity in the classroom (Cha & Ahn, 2014). In addition, how teachers implement differentiation is inconsistent due to a lack of training and time given for collaboration and planning with colleagues (Brevik et al., 2018).

High-ability students have a higher-learning potential, and when they are not given the opportunity to grow and expand their knowledge, they will not experience engaging lessons to increase their motivation to keep learning and challenge their minds (Brevik et al., 2018). Gifted students are not only those who are in the top 15%–20% who grasp concepts quickly, but they are also the ones who possess high levels of curiosity and creativity. These qualities lead to the ability to solve problems through divergent thinking, and when students are not given the opportunity to challenge their minds creatively, then they cannot become real-world problem-solvers (Young & Balli, 2014). Gifted students can focus for long periods of time on concepts of interest, and they prefer challenging work that allows them to use complex reasoning skills. These traits need to be met and fostered in the classroom. Without the academic challenge, high-ability students will become disinterested in school, withdraw academically, and could eventually take them on a pathway to negative life outcomes (Chu & Myers, 2015).

Most educators understand the importance of differentiation in the classroom, however, implementing its practice does not always take place for several reasons. Teachers lack adequate training for the practical application of differentiation in the classroom daily. Because a student's strengths cannot be solely based on a test score, teachers must take the time to get to know each individual student, along with the learning strengths, weaknesses, and areas of interest. After all

this knowledge is obtained, then teachers need to be given collaboration time to discuss how to apply differentiation appropriately and effectively in the classroom (Brevik et al., 2018). There is a deficiency when caring for gifted students, as teachers must plan for students of all different levels, which can be a challenge. In a case study conducted by Machu (2015), kindergarten teachers were interviewed regarding their practice and implementation of differentiated instruction. Through this study, it was found that those teachers who had been teaching longer than 10 years could differentiate better because they became better at differentiating through time. It came to them more naturally because they had more practice. Newer teachers in this study did not have the experience needed to vary instruction to meet the needs of different levels of students. Fleming (2013) and Haberlin (2016) explained that gifted education is no longer federally or state funded for schools. Instead, the money is given to special education, and gifted education now falls under this umbrella. With a strong focus on standardized testing, and the mastery of English language arts and mathematics standards through the Common Core State Standards, general education teachers also need to help gifted and talented learners show intellectual growth each year, be academically challenged, and help high-ability learners realize their potential. Due to a lack of funding, educators and parents must become the advocates for gifted education and promote the value and importance of meeting the needs of the high-ability learners (Young & Balli, 2014).

Future research needs to examine effective teaching strategies that are relevant to meeting the educational needs of the gifted students (Young & Balli, 2015). At the middle school level, gifted education needs to be addressed, possibly using collaboration during conferences for gifted students. In addition, teacher observations and evaluations need to address the needs of the high-ability learners, and not just the on-grade level or struggling learners (Rakow, 2017). Van

Tassal-Baska and Hubbard (2016) suggested that future research needs to be conducted regarding the difference between rural gifted students versus urban and suburban gifted students and how each group of high-ability students perform in relation to each other. According to the prior researchers, future research needs to explore an evidence-based gifted education program that would be culturally diverse, and which could work in various school settings. A complete analysis needs to be completed of what the needs of the gifted students are, how they are being met and not being met, and what can be done differently to challenge their brains (Chu & Myers, 2015). There needs to be a change in philosophy; instead of response to intervention targeting only the struggling learners, teachers need to also recognize above-grade level students in order to target their instruction more specifically. In addition, school-wide enrichment committees need to be formed to create opportunities for extra-curricular enrichment, technology classes, and mentorships where gifted learners could thrive and excel (Haberlin, 2016).

Purpose of the Study

The purpose of this qualitative phenomenological study was to explore the classroom experiences of teachers with regards to utilizing differentiating instruction with high-ability learners. Gifted and talented learners are expected to show academic growth each year, but there is a lack of differentiation happening in the classrooms due to a lack of teacher training and professional development for teachers of gifted students. This phenomenological study was conducted to learn if and how teachers were using differentiated instruction to meet the needs of the gifted students. In addition, in the school district of study, gifted students are no longer tested and identified as gifted and talented. Due to a lack of funding, the district cut those measures several years ago, and as a result, all gifted students were included in the general education

classroom where teachers are responsible for identifying high-ability students and implementing differentiation strategies that work.

During each educator interview, educators were asked to reflect on their teaching practice before and after this phenomenon. Educators understand the importance of varying classroom instruction for individual students, teaching them at their academic level to challenge their brain and their way of thinking; however, this differentiation is not always implemented for gifted and talented learners. When teachers differentiate their instruction, the students become more motivated to learn and grow academically, as they find an area of study they enjoy. This differentiation can only be accomplished when teachers are provided effective training and professional development with a focus on meeting the academic needs of the gifted students. "Differentiated instruction allows all students to access the same classroom curriculum by providing entry points, learning tasks, and outcomes tailored to students' learning needs" (Watt-Taffe et al., 2013, p. 304). Teachers create and implement programs for gifted students, but also mentor these high-ability learners on their learning journey (Sekowski & Lunianka, 2015). Differentiation of instruction can take place by teachers varying the process (how curriculum is taught), the products or final demonstrations that show their learning (the final assessment), the content of the material (curriculum compacting or acceleration), and the environment in which they are learning (Tomlinson & Murphy, 2015).

Through individual teacher interviews, a qualitative phenomenological study was conducted in grades three through five in a small school district in California. This school district is a high-performing school district, with third-grade through fifth-grade students having met proficiency in both mathematics and language arts on the state test for the past few years. However, in the subject area of mathematics, the district is maintaining their scores, not showing

an improvement in scores each year. While there are a variety of levels of students in each of the five schools, it is important to show the positive impact of differentiated instruction for all gifted learners. This will not only help the district show academic growth each year (through a rise in test scores), but more importantly by differentiating instruction the students will become critical thinkers who are able to solve real-world problems. The topic of differentiation is not new to the teachers in this district. Teachers have been through several trainings, workshops, and hands-on activities focused on learning about the importance of differentiation; however, ultimately it is up to the teachers to implement differentiation in their classrooms. As a result, there are many different levels of differentiation that take place in this school district. Some of the grade levels at different school sites differentiate by leveling their students (based on ability) for mathematics, while some teachers choose to run individual groups within their own classrooms. One potential barrier for teachers who are not differentiating in the classroom is a lack of collaboration time to be able to discuss individual students and their needs.

Using individual teacher interviews, an in-depth discussion took place about the topic of differentiation. Through the interview questions, participating teachers discussed their most effective differentiation strategies for gifted students in the subject area of mathematics. Then, they had an opportunity to share what resources are needed to best support gifted students' needs, as well as the professional development opportunities that would be the most effective for helping teachers to improve the delivery of differentiated instruction to the gifted students. In addition, teachers had the opportunity to share how their gifted instruction has changed over time—if at all—since gifted and talented testing ended.

Research Questions

With this qualitative phenomenological study, the identification of how differentiated instruction is being used in the classroom to meet the needs of the gifted students in Grades 3−5 in the subject area of mathematics was explored. The following research questions provided a central focus for this case study:

RQ1. How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in Grades 3–5?

RQ2. What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in Grades 3–5, as well as the types of support needed to meet their needs?

RQ3. What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students?

Rationale, Relevance, and Significance of the Study

The results of this study may provide evidence for educators, parents, and students on how differentiation positively impacts a student's understanding. Differentiation can be seen when students are given more choices in learning the curriculum, maybe through a different level of questioning during class discussions or assignments, a grouping of students during instruction (based on ability for mathematics), individual learning contracts, acceleration once proficiency is shown, or a choice in final projects completed. If differentiation is not taking place in the classroom, and there are a variety of learning levels and needs of students, then individuals may be off-task, some may be giving friends the answers instead of helping them understand the concept of mathematics they are learning, while others may be finishing the assignment quickly

and then not having anything else to complete. In addition, if differentiation is not taking place, teachers may be frustrated with classroom management because the students are exhibiting unwanted behaviors.

Gifted and talented students are the ultimate beneficiaries of this study. As teachers step back and evaluate their instructional methods and best practices, collaboration amongst colleagues takes place, planning occurs, and differentiation of instruction takes place. Although there are some teachers who are not using differentiation in the classroom, the goal is that through collaboration during teacher planning time, or during the study's individual interviews with the teachers, ideas for varying instruction will be discussed, offering suggestions for classroom implementation. The topic of gifted education has been studied, and the deficiencies have been identified as a lack of teacher training, lack of teacher collaboration and planning time for gifted students, and a lack of funding specifically going toward gifted education. During individual teacher interviews, the teacher participants were asked what they believe are the deficiencies when it comes to gifted education in the school district. It is important to have the teacher participants discuss and identify the struggles in gifted education so that they have more buy-in in creating solutions and helping to meet the needs of these high-ability learners. Through an open discussion between the participant and the researcher, these deficiencies can be identified as well as a brainstorming of solutions can take place. Results of this study will discuss the positive impacts of differentiation, and how it better meets the needs of the high-ability learners.

Through this study, teachers were interviewed individually about their perspectives of the importance of differentiated instruction when delivering mathematical concepts. This study may assist teachers in making better decisions when deciding on instructional strategies for each

student. The overall impact of this study will contribute to the understanding of teacher perspectives and attitudes towards differentiation of instruction in the classroom, providing a potential starting point for a district-level discussion of how teachers can better meet the needs of gifted and talented students in the classroom.

Definition of Terms

Differentiated instruction. Differentiation of instruction in the classroom can occur in several ways: the process (how the content is delivered), the product or demonstration of knowledge (the final assessment), the content (curriculum compacting, accelerated pace), or the environment in which learning takes place (Tomlinson & Murphy, 2015). Differentiation can also be defined as, "an attempt by the teacher to address the variation among the learners in the classroom through multiple approaches that modify the instruction and curriculum to match students' individual needs" (Brevik et al., 2018, p. 36).

Gifted and talented (GATE) student. A gifted student is also known as one who has a higher learning potential (Brevik et al., 2018), and who can create high-quality products and performances (Chu & Myers, 2015). In the school district for this qualitative phenomenological study, gifted students are no longer identified through a test. Students previously had to score advanced on the standardized Mathematics and Language Arts state test, and then score 95% or higher on the Otis-Lennon School Ability Test (OLSAT) to qualify as gifted. Currently, gifted students are classified (but not officially identified with a label) as students who score above proficient on the Smarter Balanced Assessment (SBAC) in both Language Arts and Mathematics.

Gifted education. A focus on educating the gifted and talented student, with a strong focus on meeting each individual student's educational needs, individual differences, interests,

strengths, or weaknesses (Kahgevi & Akgul, 2014). Because high-ability learners have the capability to show understanding and mastery of grade-level content before the rest of the learners in the classroom, gifted education offers opportunities for the students to think, requiring them to solve real-world problems through critical thinking and collaboration with similar high-ability learners (Scott, 2014).

High-ability learner. Students who have shown an outstanding level of accomplishment when compared with other students of similar age, grade, environment, or experience. These students require acceleration or differentiation of curriculum in order to further develop their intellectual, creative, or artistic capability (Schmitt & Goebel, 2015).

Assumptions, Delimitations, and Limitations

Two assumptions are relevant to this study: (a) it is assumed that all participants will answer all interview questions honestly and to the best of their abilities; and (b) the data collected will provide a clear explanation of the role that differentiated instruction has in the development of the gifted students' understanding in the subject area of mathematics. Delimitations are factors that help define the boundaries of the study. The one delimitation of this study is a sampling and focus on mathematics. This study focuses on third-grade through fifth-grade teachers instead of all grade levels in the district. Grades three through five are the grade levels that participate in state testing each year, and these are the grades where there is a greater range of academic abilities in the classroom when it comes to the subject area of mathematics. More specifically, there is a focus on mathematics, as the district's focus has been on improving and increasing mathematics understanding based on state test scores from the last several years. Therefore, this study will explore the role of differentiation strategies in the subject area of mathematics.

Limitations are factors in which are beyond the researcher's control and can threaten the credibility of the study. One limitation is the geographic area of the study, as the five elementary schools in which the study will take place are in rural California. Two of the schools are Title I schools, while the other three schools are affluent schools. Due to this limited geographic nature, the results from the study may not be generalizable to a larger population. The second limitation is the timing in the school year of the study; although many respondents will be able to begin this study, some may have to exit before the study is complete. The third and final limitation is due to the failure of sample respondents to answer with candor, results may not accurately reflect the opinions of all members of the included population.

Summary

The need for differentiated instruction is high, as there are many gifted and talented students who have an above-average ability who possess traits that are creative and curious. These traits need to be fostered, so that the motivation, perseverance, and determination to continue to learn and challenge one's brain will continue (Brevik et al., 2018). Gifted and talented students cannot just be placed in mixed-ability cooperative learning groups with the expectation to teach the struggling learners (Rakow, 2017). Instead, gifted learners should be placed in flexible groups (based on their ability), where teachers use the assessments to adjust and inform instruction. Offering high-ability students a more personalized pathway fosters critical thinking and creativity, motivating the students to learn more and dive deeper in the content (Missett et al., 2014). In order to make effective groups and personalized pathways for gifted learners, teachers need to know their students' academic needs, strengths, and weaknesses to be able to plan a variety of lessons and create differentiation options (Watts-Taffe et al., 2013). Although many teachers understand the need for differentiation, far fewer teachers

prepare, plan, and teach to the diverse needs of the classroom. Schools cannot just expect teachers to vary their level of curriculum, instruction, environment, or assessments with their students without professional learning development and opportunities for collaboration of the practical application of differentiation must be given to educators (Chien, 2015). Instructional methods for gifted and talented students must be evidence-based through research, so that students are given opportunities to work together with others of unique talents to solve problems and explore a real-world topic (Imbeau, 2017; Plucker & Callahan, 2014). When effective differentiation strategies are applied to the gifted students, these students improve academically and begin to thrive emotionally and socially in the classroom. Gifted students then learn to be real-world problem solvers and critical thinkers. Chapter 2 goes on to discuss the literature behind the importance of differentiated instruction. Chapter 3 discusses the methodology of the qualitative phenomenological study. Chapter 4 discusses the results of the study and the analysis and interpretation of the data collected. Chapter 5 draws conclusions based of the results of this qualitative phenomenological study.

Chapter 2: Literature Review

Introduction to the Literature Review

A review of the literature suggests differentiation cannot just be instituted by one teacher at an individual school site. Instead, there must be buy-in by the general education teachers, the special education teachers and their aides, parents, teachers' assistants, and the administration. In order to make differentiation successful, teachers need time to collaborate so they can discuss their students' needs, plan out a proactive instructional plan, manage student data, revise curriculum based on the student mastery levels and interests, and discuss positive instructional methods and examples. Collaborating with colleagues allows teachers to feel more comfortable and confident with differentiation (Cha & Ahn, 2014).

Although most teachers recognize the need for differentiation, fewer teachers can accommodate for diversity in the classroom. Differentiation can occur in several ways: the process (the how), the product and demonstration of knowledge (the final assessment), the content (curriculum compacting or advanced pace), or the environment in which gifted students learn (Tomlinson & Murphy, 2015). When students are placed into groups, they need to be flexible and fluid, meaning that students can move up or down, depending on their level of mastery per topic. Because of these fluid groups, students need to be assessed carefully and regularly, as the teacher analyzes results for patterns and needs. Based on these results, students should be moved accordingly (Watts-Taffe et al., 2013). Often, there is not enough time to plan out the differentiation or for the management of student information. It is necessary to not only provide teachers with the appropriate professional development on the theories of differentiation, but also to be trained on the practical applications of differentiation (Brevik et al., 2018).

Teachers need to be given appropriate collaboration and planning time with colleagues to create implementation strategies for success (Chien, 2015).

Teachers who use effective teaching strategies make learning meaningful by building a connection with their students. When teachers try to bridge the gap between the different cultures at home and school, students see the teacher's buy-in, and they are more willing to work hard to succeed (Tomlinson & Jarvis, 2014). Instead of having students read and answer questions, students must be encouraged to use creativity to think critically and solve problems. Tasks that students must complete must be challenging so students experience some struggle (which promote critical thinking). The goal is to move students from multiple-choice test takers to real-world problem solvers (Beasley, Briggs, & Pennington, 2017). In this aspect, effective teaching strategies for all students will make a positive impact on gifted learners.

Conceptual Framework

When it comes to differentiated instruction, there are many needs, challenges, and changes necessary in order to effectively implement differentiation throughout the school day. Chien (2015) explained that there is a lack of teacher planning time, as differentiation takes collaboration amongst colleagues to maximize student learning. Teachers need to learn and understand each student's interests and readiness levels, as well as their grade level standards and textbooks. Teachers also lack the necessary training to effectively differentiate their lessons in the classroom; they need the professional development to increase their knowledge in order to support their students' learning needs (Cha & Ahn, 2014).

Vygotsky's (1978) social constructivist theory. Vygotsky's theory of constructivism explains that learning is an active process, and in order to maximize this learning opportunity, students need to be taken through a meaning-making process instead of being told the

information to remember (Martin & Stager, 2013). Too often in the United States the approach to education is that knowledge is obtained through lecture, worksheets, and textbooks, and then mastered through rote memorization, drill, and practice. However, when teachers use this instructional approach, the learners who come out of this learning system do not possess the skills to think critically and creatively, but who can simply repeat general information they have memorized. Vygotsky (1978) explained that effective practice means setting up obstacles that provide opportunities for the students to think critically in order to solve, which, in turn, fosters a deeper understanding of the existing knowledge (Derry, 2013). Martinez and Stager (2013) proposed that the best way to learn new knowledge is when students collaborate with other students.

Constructivism and the classroom. Martinez and Stager (2013) explained that in the classroom the theory of constructivism means that the teacher becomes more of a facilitator instead of the one who spreads the knowledge to all students. The three goals of constructivism are to increase and use regularly: problem-solving skills, higher-order thinking skills, and collaborative work. Students conduct experiments and focus on real-world problem-solving skills instead of continual practice for mastery of skills. As project-based learning experiences become a focus, teachers should take a step back when grading student projects, looking at what the student created and completed, and ask if the project motivated the student to continue to learn. Accepting and embracing the students' creativity will place more responsibility on the student, and students will want to show their knowledge and thought process. It is this type of project-based assignments that the students will remember, giving them memories for life and content they have mastered (Martinez & Stager, 2013). With Vygotsky's (1978) theory, as the teachers' role diminishes, the responsibility of the student increases. The teacher will teach the

students to self-reflect, assessing how their understanding of a concept is increasing. This allows the increase in knowledge to be a continual process, according to Vygotsky's (1978) zone of proximal development (ZPD). The ZPD is the difference between what the learner can do without help and what the learner can do with help (Martin & Stager, 2013).

When the Common Core State Standards were created and adopted, some educators believed that these new standards would be able to meet the needs of all students. However, with further research, it was discovered that these standards have had little impact on the gifted students. Teachers need to understand that gifted students have intellectual and socially unique needs that must be supported and met through various experiences in the classroom (Chu & Myers, 2015). A gifted student may be of super intelligent academically, but they may struggle in social situations. A student's strengths are not solely measured by test scores and assessments. Instead, the environment in the classroom needs to have social interactions in a positive climate (Brevik et al., 2018). With the theory of constructivism, the active role of the teacher is modified, as the teacher is encouraged to help construct the knowledge rather than just memorize facts. Teachers of gifted students must challenge them both academically and socially. Problem-solving and inquiry-based activities are ones that transform the students from being passive to active learners.

Teaching and learning in the classroom can no longer solely occur through whole-class instruction. Instead, the teacher must act as the facilitator and guide the students through their education, creating a more student-centered environment (Keith, 2015). When educational material is presented in a manner representative of a student's learning style, the student can maximize their learning. According to Vygotsky's (1978) theory of constructivism, teachers can make the biggest impact on students by asking effective questions, which are questions that are

going to allow the students to think critically and creatively. Teachers need to use Bloom's taxonomy (level of questioning) to increase the depth complexity in the level of questions asked to students. Instruction can be differentiated in many ways including "depth, breadth, pace, and complexity of content" (Scott 2014, p. 164). With that in mind, academic and social instruction must be differentiated in upper grade classrooms to challenge each student's creativity, curiosity, originality, motivation, perseverance, and determination.

Assessing students using a constructivist model. Assessing students in alternate ways is also different in a constructivist classroom versus a traditional classroom. Summative testing does not have to be the only form of assessment, where student answers are determined correct or incorrect. Instead, assessment could include observations of student work, portfolios, and final projects. The focus of assessment is on the process of how students learn and not just the product (Tomlinson & Murphy, 2015).

Griess and Keat (2014) conducted a study on the differentiation of instruction at the university level with regards to teacher education programs. Each one conducted their own study on differentiation in teacher preparation programs. Keat conducted a study in the spring of 2005; there were 17 candidates enrolled in the class, evenly distributed from various programs (five from bachelor's programs, five from master's programs, and seven from credential programs). During the course, Keat was going to differentiate instruction in content, process, and product. When differentiating the product of the course, the students were given various options for final projects to show their mastery of knowledge. Because there was differentiation of requirements, there was also a variety in grading rubrics. Instead of evaluating the quality of the representation, Keat was evaluating the quality of how well each candidate met each objective through their choice of representation. At the end of the course, Keat (2014) gave the students a survey, and

overall, the students explained that they were uncomfortable and nervous at the beginning because they were not used to be given choice to show their expertise of the content knowledge. By the end of the course, when the students trusted and understood the instructor's objectives and grading rubrics, they enjoyed the new learning and assessment process. They were able to gain new perspectives because they tried new strategies through Keat's process of differentiating the product.

The following semester, Griess conducted a study involving 20 teacher preparation students (15 in bachelor's programs, two in joint master's and credential programs, and three in director's credential program). Griess did not differentiate as extensively as Keat, allowing only two options of differentiation within the requirements of the class. Griess offered the enrolled students two options for developing a curricular unit, and two options for creating a scope and sequence for the class. Students were encouraged to complete the assignments using their strengths. Throughout the process, all the students expressed their frustration with the rigor of the course and its assignments. Gneiss also gave the students a survey at the end of the class, and none of the students spoke directly of the methods of differentiation that had been used. In the end, when Griess and Keat (2014) analyzed the effectiveness of differentiation, their hope was that their teacher preparation candidates would encourage self-reflection, inquiry, creativity, and differentiation in their own classrooms.

***Twenty-first century skills and constructivism*.** Twenty-first century skills directly relate to the theory of constructivism. Conley (2013) discussed the importance of teaching our students the skills to allow them to be successful in high school, college, career, and beyond. Some of these key learning skills and techniques include teaching the students to be owners of their own learning through goal setting, self-awareness, progress monitoring, study skills, and collaborative

learning. With Vygotsky's (1978) theory of constructivism, the teaching process encourages collaborative learning through group work, encouraging students to create and answer their own questions. In a constructivist classroom, learning is constructive, active, reflective, collaborative, inquiry-based, and evolving. When students are engaged in the learning process, not only do they learn more content academically, but they also prepare themselves for their futures.

Howard Gardner's theory of multiple intelligences. All students learn differently and represent ideas in their minds diversely. Gardner (1983) explained that a person's intelligence cannot just be determined by their I.Q. Each person is unique, and there is academic potential for all, both as children and as adults. Because of this, Gardner (1983) created his theory of multiple intelligences. There were originally seven intelligences in which people could identify their strengths and weaknesses. The first three intelligences are related to the arts: spatial, bodily-kinesthetic, and musical. The next two intelligences are most often found in schools: logical-mathematical and linguistic. Finally, the last two are personal intelligences: interpersonal and intrapersonal. People who are spatial learners have a strength when dealing with space, either on a large or small scale. Examples of these experts could be pilots or sailors (large scale) or architects or chess players (small scale). Bodily-Kinesthetic learners use the whole body to solve problems; these people learn best when they can keep moving. Musical learners have a strength in music, while Logical-Mathematical learners have strength with numbers. Linguistically inclined learners study words and their meanings, having a language intelligence. Interpersonal learners enjoy working with others, as opposed to intrapersonal learners who prefer to work by themselves. The last set of intelligences came about several years later, when Gardner (1999) included the following: naturalistic, existential, and moral. Naturalistic learners have a special connection with nature and the environment. Existential learners have a special focus on ultimate

issues and what happens in the next phase of life, and moral intelligence hyper-focuses on rules, behaviors, and attitudes that govern life. Gardner (1999) explained that the way one learns is dynamic, and when teachers can teach to their students' strengths, more meaningful learning occurs. Martinez and Stager (2013) supported this theory of multiple intelligences, explaining the importance of teachers in schools taking the opportunity for students to learn and show their knowledge in new ways, reflecting the world they live in and using their tools of mastery to show their growth of knowledge.

Multiple intelligences in the classroom. Teachers may ask how they will use Gardner's (1983) theory of multiple intelligences in their classroom. Haynes (2018) explains the importance of getting to know one's students better and thinking beyond the typical linguistic and logical-mathematical learning. When this takes place, all the intelligences can be brought into the classroom. This was Gardner's (1999) first approach to education, where teachers have a more general vision of education, allowing students to extend their learning using different learning strengths. Teachers need to be trained in a wide variety of strategies including music, art, theatre, technology, field trips, collaborative and cooperative learning, and self-reflection. When teachers are well-equipped, they move their instruction away from lectures, textbooks, and worksheets; instead, gearing their instruction so that students can learn more independently. Looking at the content that is being learned and then adapting it to the students' learning styles, helping meet the needs of all students. Gardner's (1999) second approach to education was about developing flexible programs, where students develop a deep understanding, one where curriculum is not too rigid, where there is more than one form of final assessment, allowing the students to truly show what they know. Encouraging students to explore creatively shows their true understanding for the content. Gardner's third and final approach to education dealt with

morality, creating a world where a wide array of people will want to live because their strengths are all valued (Smith, 2008). This relates to differentiating learning in the classroom because it is the variation of content, process, or product to meet each student's needs.

Review of Research Literature and Methodical Literature

With Vygotsky's (1978) social constructivist theory and Gardner's (1983,1999) theory of multiple intelligences, research showed that students learn best when their academic needs are met, when teachers take the time to learn about their students, and when meaning-making experiences in the classroom take place. Gifted students spend more time synthesizing, evaluating, and analyzing information. They are analytic (problem solvers, critical thinkers), synthetic (able to generate useful ideas), and practical (able to take an abstract idea and relate it to the real world). As a result, gifted students can create high-quality products and performances when they are challenged academically (Chu & Myers, 2015).

Importance of gifted education. In classrooms all over the world, there are students with a range of abilities that must be met and challenged. "Instruction for gifted students must be differentiated in the depth, breadth, pace, and complexity of content for students through opportunities outside of what is being offered in the general classroom setting" (Scott, 2014, p. 164). Using Bloom's taxonomy, students can be given different levels of questions to expand their knowledge as they try to find answers for the questions. Tomlinson and Murphy (2015) explained the level of diversity in each classroom, as there are many different languages, levels of language understanding, learning styles, along with various academic levels of students in the classroom. Therefore, differentiating instruction is essential to maximizing student learning.

In 2014, Missett, Brunner, Callahan, Moon, and Azano published the results of a 2-year study involving 55 to 61 teachers in 10 states, with a goal of better understanding the experiences

and beliefs that influence classroom expectations of meeting students' needs. One finding that came from the study was that those students who showed confidence and knowledge in their subject areas were more likely to have been given a personalized pathway to follow and excel. Those students who were not as confident and struggled academically were most likely given a group pathway to follow. This exemplifies the need for differentiation of instruction, as each student does not learn in the same way, but all students can successfully learn and master the content. Teachers need to be empowered to make curricular and classroom management decisions, as it is these decisions that will increase the effectiveness of differentiation (Watts-Taffe et al., 2013).

Gifted students are not only diverse learners, but they are also vulnerable, as socialization problems can be a trait of these students. Gifted students are brilliant academically, as they are analytic (problem-solvers), synthetic (able to generate solutions), and practical (can transfer ideas into practice), but they can often suffer socially, struggling how to work with others (Chu & Myers, 2015). Gifted students may not show their vulnerabilities to their parents, teachers, or sometimes peers because they want to maintain their positive image. However, gifted students often have difficulties interacting with their peer group; this can cause frustrations and misunderstandings (van der Meulen et al., 2014).

A student's educational needs fall under two categories: academics and social-emotional. Academic needs are broken into two categories: differentiation and challenge, both of which focus on the acceleration of content. When students have a strong understanding of how to answer the different types of questions being asked, and how to tackle solving problem-based learning activities, they can self-regulate and self-advocate for their needs. Social-Emotional needs are also broken down into two categories: challenge (acceleration) and learning how to

work with all students to prevent bullying. Meeting the academic and social needs of a gifted students lead to an enjoyment of learning, and when there is an enjoyment of learning, more academic content can be learned and mastered (Kitsantas, Bland, Chirinos, 2017). See Figure 1 of gifted student needs.

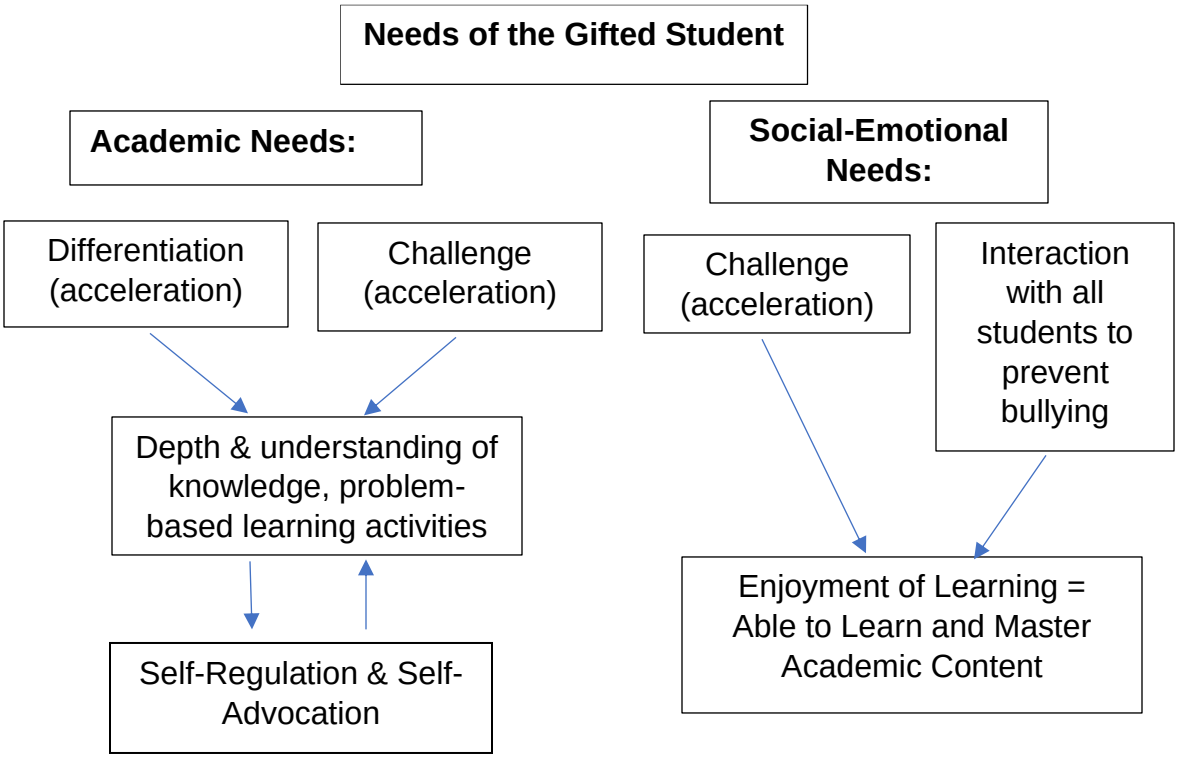

Figure 1: This figure describes the academic and social-emotional needs of the gifted child (adapted from Kitsantas, Bland, & Chirinos, 2017).

Ways to differentiate instruction. Meeting the needs of each student is of utmost importance for the teacher. There are several strategies for differentiation including flexible grouping, independent projects and/or investigations, varied instructional strategies, and varied questions (Chien, 2015). “Giving students the opportunity to conduct interest-based independent investigations can increase student learning, enhance students’ intrinsic motivation, create self-directed learners, and develop creative producers” (Westburg & Leppien, 2017, p. 13). In order

to have flexible grouping, regular assessments need to be given and analyzed, and then changes made accordingly (Watts-Taffe et al., 2013).

Young and Balli (2014) conducted a research study focused on the parent and student perspectives on which programs for gifted and talented education met the educational needs for students in grades four through seven. Fifty-two interviews were conducted across 10 public schools, seven of which were neighborhood schools, and three in which were magnet schools. In their gifted education program, there was a three-ring conception model. This means that the students were designated as gifted in three different areas: above-average ability, high levels of task commitment, and high levels of creativity. By separating the students in this fashion, there were four different gifted and talented programs offered to students: cluster grouping, part-time grouping, special classes, and magnet schools which solely focused on gifted students. The results of the study showed that students and parents at the magnet schools were totally satisfied in comparison to the neighborhood schools; however, few families chose to move their students to the magnet schools. Instead, it was found that individual teachers are the ones who make the difference in a child's education, and the teachers who have had more extensive training on teaching the gifted students were more successful (Young & Balli, 2014). The teachers who are most effective give extra effort to understanding their students and personal experiences, helping to build a bridge between home and school, making the individual child's education a priority (Tomlinson & Jarvis, 2014).

The Challenge Leading to Engagement, Achievement and Results (CLEAR) Curriculum Model allows the students to be grouped together based on ability, giving students the opportunity for more personalized pacing instead of a one-size fits all approach. Students were grouped within a class, between classes, and cross-grade level. During this case study, when

students were grouped together, they were grouped using four different criteria: readiness levels, a goal to have fun and free the students' minds, personalities (when students with similar personalities worked together, there was a higher level of work completion among students), and collaboration (when higher-achieving students were grouped with lower-achieving students). When this model was implemented, one finding was that non-struggling advanced students were given a personalized pathway to follow; whereas, the less confident, struggling students were given a group pathway to follow and be successful (Missett et al., 2014).

Acceleration and curriculum compacting are two strategies used to differentiate instruction. When choosing curriculum, the teacher must begin with the standards, and then narrow down the focus on which curriculum to use. When doing so, the teacher must ensure that the selected curriculum is research-based and has been successfully tested on gifted learners. In addition, the curriculum must use higher-order thinking skills to promote critical thinking amongst the students, as well as problem-solving skills. Integrating technology and multimedia resources into the lessons or products created allows students to practice their online research skills. Project-based learning activities provide opportunities for students to use inter- and intrapersonal skills to solve problems and show their mastery of the content (VanTassal-Baska & Hubbard, 2016).

Strengths of differentiation. As each student has different needs, and a variety of strengths, when teachers can effectively differentiate, students make gains both academically and socially. "Effective differentiation is not found in a basal series of even in a particular research-based instructional strategy—it is found in the decisions teachers make" (Watts-Taffe et al., 2013, p. 306). When teachers can meet the individual needs of their students, when it comes time to refer to special education, there is a stronger argument for the need for testing and additional

services provided (Watts-Taffe et al., 2013). When students are given differentiated instruction through acceleration, enrichment, or homogenous grouping, they are more successful in learning (Prior, 2011).

Challenges of differentiation. Although differentiation is essential as gifted students have different strengths and needs, there are also several challenges involving implementation in the classroom. Teachers need time to assess students' needs, interests, and academic readiness levels. Once teachers can assess their students, time needs to be allotted for curriculum planning of key concepts, assignments, projects, and activities that will fit each learner (Chien, 2015). A study that was conducted in 1993, showed that 1.5 million students needed a curriculum that was more rigorous than what was offered to them (Chu & Myers, 2015). Another case study in an English School in Taiwan, conducted in 2001 and 2005, ran into some challenges when trying to meet the needs of the gifted learners. One finding from the study was that a teachers' learning community needed to be built, supporting teachers with strategies for differentiated instruction. Another finding was to invite mentor or expert teachers to demonstrate differentiated lessons in real classrooms (Chien, 2015). Brevik et al. (2018) explained that although there may be teacher lessons on differentiation in teacher preparatory programs, there is a lack of time for teachers to plan the practical applications for differentiation with individual students and classes.

Another challenge for teachers is that few have adequate and appropriate training to support all different types of learners. Not all teachers are trained to understand the needs of all their students. Gifted students need interactions and opportunities in academic, social, and emotional interactions with other gifted students (Chu & Myers, 2015). Teachers need guidance in the management of student information and training in programs and classroom management to support this style of learning. Not only do they need basic training on the differentiation of

instruction, teachers also expressed the need to have training on the practical application of this concept in the classroom. Because of the lack of training offered, there is inconsistency with implementation (Brevik et al., 2018). In addition, teachers need to keep the doors of communication open so that colleagues can support these students, as well as parents at home (Cha & Ahn, 2014). In a case study in Korean schools, Cha and Ahn (2014) interviewed teachers and community members who identified difficulties with the practice of differentiated instruction. One concern was how teachers were supposed to match student grades to national assessments, and then how to communicate these teaching practices and student needs to parents. In the end of the case study, to address these needs, a mediating tool was provided to allow teachers to record student information and then share this information with families.

In a case study conducted by Machu (2015), 345 Kindergarten teachers were surveyed about preschool-age children ages three through six. The findings from this study showed that one challenge was the need to plan for different levels of students. Teachers who had been teaching longer than 10 years had the skills to differentiate better because they had a larger set of experiences and methods from which to choose. Teachers who had been teaching less than 10 years lacked the training and skills to naturally differentiate to the students. It is proven that when educators are well-trained, they offer a more effective education to their students (Gallagher, 2015).

The lack of funding is a challenge for gifted education. In a study by Fleming (2013), there was $7.4 million funded in 2011, and out of that money, only four of the United States fully-funded a Gifted and Talented program for their students. Zero funding for gifted education was provided for 14 out of 43 states, while 32 out of 43 states required gifted services to be provided, and eight out of 43 states left gifted education unfunded. The needs of the gifted

students are not going away; however, “proving the worth of gifted education, as many believe highly capable students will skate through the school system, or at least perform competently” (Fleming, 2013, p. 4), becomes the challenge when funding is allotted to districts and their schools. Although the United States is in competition with the countries worldwide to build students of the upcoming generation who are creative, innovative, critical thinkers, and problem-solvers, the money that is given to schools in support of gifted education shows a lack of commitment to that competition (Gallagher, 2015).

Suggestions for the future. Gifted children are the future leaders, scientists, doctors, inventors, entrepreneurs, and because of this, educators need to advocate for adequate and appropriate training in differentiated instruction. Educators need to continue to collaborate with colleagues about how to better meet the needs of the gifted students. In addition, educators need to continue to research best practices in gifted education to meet the needs of the students (Young & Balli, 2014).

Gifted education needs to be evidence-based and implemented into all schools. Instead of forming cooperative learning groups, where the gifted student’s mind is not necessarily challenged, gifted students need to be given the opportunity to have accelerated curriculum or enrichment opportunities (Chu & Myers, 2015). Conferences for gifted educators often allow educators to network with one another, which helps gifted education move away from the cooperative learning and groupwork, where these practices often stifle the learners from reaching their maximum potential (Rakow, 2017).

When teachers use CLEAR units of study, they are meeting the students’ needs through: Continual formative assessment, clear learning goals, data-driven learning experiences, authentic products, and rich curriculum. These are evidence-based curricular and instructional strategies

that will allow educators to develop rigorous and interesting learning tasks and experiences for the students where they are expected to work together to solve problems or explore a new topic (Imbeau, 2017). Instead of just creating school reform to help educate and protect the students who need intervention, educators need to develop academic programs that challenge all students to show intellectual growth, be challenged academically, and realize their potential (Haberlin, 2016).

Review of Methodological Issues

Studies on gifted education have been conducted in schools worldwide, ranging from preschool education to teacher preparation. Some qualitative studies consisted of surveys that were handed to teachers who were given the opportunity to participate, while some consisted of student and parent opinions of their education.

Kahveci and Akgul (2014) conducted a study of fifth through seventh graders in Turkey aimed at getting students' opinions and attitudes about their education and their home reading habits. There were 370 gifted students surveyed across 12 cities; each student was given eight questions (three questions were based on their challenges in their school, three were based on differentiation, and two were based on classroom climate). One finding that came out of the study was that gifted students felt more comfortable in the younger grades, but their confidence decreased as they moved up in grade level. Another finding was that the subjects of mathematics and science were less challenging that the other subject areas. The schools surveyed used the integrated curriculum model (ICM), which consisted of three dimensions: advanced content, high-level work, and cross-curricular content development. This educational model allows students to conduct an in-depth study using inquiry, problem-solving, and reasoning skills. One common theme that came out of this study in Turkey was that there was a continual absence of

challenge for high-ability and gifted students. There also needed to be some improvements done to teacher education. In the whole country, there are only two universities that offer teacher education programs, and gifted education is not part of the national education policy. Results of this study show that there needs to be adequate training for teachers to meet the needs of the gifted and talented students, including implementing differentiation, offering challenging courses, and offering other enrichments opportunities for gifted and talented students.

The country of Netherlands has had a history of creating a culture of Cs, meaning that students who come out of the education system in the Netherlands are just average citizens; there are no top universities, no significant research, and no leading companies in the country. The belief in education is that gifted students will learn anyway, so they are not the teacher's focus (De Boer et al., 2013). An overview was given of the Dutch education system, including the action plans for the future. Because of the mediocre characteristics of Dutch schools, in 2000, the government created a National High Ability Information Center, with the purpose of giving the government information about how to appropriately educate gifted children. At that time, less than 60% of teachers appropriately aligned lessons to students regarding task variation and differentiation in the classroom. In 2011, according to De Boer et al. (2013), the new government policy created objectives to offer students more individualized instruction and increase the professionalism in their teachers. In 2012, the Department of Education in the Netherlands concluded that education had four themes which included the following: One, a definition of gifted students, and how they would be identified and motivated to perform at high levels; two, teachers would differentiate their instruction, becoming greater professionals, and create an overall ambitious school culture; three, create programs that promote excellence, and create a standard of what is working in education; and lastly, create a list of system characteristics and

interventions that have taken place in certain situations. It was clear that until the last seven years that gifted education was not a priority in the Netherlands; however, if they want to compete at high levels in their educational system, and build successful students who come out of their schools, they need to refocus their priorities in education, making gifted students a more top priority (DeBoer et al., 2013).

Gifted programs are successful when the educators working with these high-ability kids are well trained in the content area in which they are specializing. Dimitriadis (2016) conducted a study in England identifying the problems with the implementation of their gifted education system in the school. Phase one of the study was a questionnaire passed out to 224 schools in the five areas of London (three from outer London and two from the inner city of London). Out of the returned surveys, they all stated that gifted education was a part of the curriculum and addressed in each of the schools. However, phase two proved otherwise. In an extensive study, including interviews, identification of gifted students, observations, and documentary evidence (lesson plans, assessments, scores, and student work), it was concluded that there was an overall lack of training regarding how to educate gifted students. This study included four teachers in four different schools and areas across London. Two of the teachers taught gifted students in Mathematics; one of the teachers had a mathematics background that proved to be beneficial when teaching the high-ability students. She had more confidence in her abilities because she had a mathematics background to fall back on when she was stuck. The other teacher was much more insecure about teaching mathematics and believed that the gifted students did not need attention and support. In the classroom, this teacher worked mainly with the middle and low-ability students. On the contrary, the teacher who had a background in mathematics, loved challenging her students with work that made the students think critically instead of just giving

them additional work because they were intelligent. In the end, Dimitriadis (2016) concluded that a program, "when delivered through well-trained teachers, may have positive results in students' achievement, attitude and motivation. However, positive results do not necessarily mean success of a gifted program" (p. 232). The student success could be due to positive teaching strategies, which include individualized support of a student through the teachers' focused attention. As a result, it was concluded that all teachers should be highly trained in the subject area in which they are teaching, as well as in the area of meeting all students' needs.

Over the last several years as there has been a rise in technology in society, and accordingly there has also been a rise in the use of a variety of technological devices in the classroom. In 2012, Periathiruvadi and Rinn conducted an empirical research study on the use of technology with gifted students, highlighting the best practices in the classroom. Through a study of 22 research articles reviewed, the overall finding was that gifted students had a positive perception about technology in regards to their learning. Students are interested in online learning, and as a result, it has shown to be effective for both younger and older students. These individuals benefitted from the online discussion boards; however, students explained that they missed the face-to-face interactions with teachers and peers. In addition, students also expressed a need for scaffolding of assignments to be more successful. The limit in this study was the amount of technology training that took place for both the students and the teachers.

Although the need to focus on gifted education has been studied throughout the world, the studies are specific to different countries in various grade levels and subject areas. Many of the studies used surveys, questionnaires, or interviews, while few used classroom observations and documentary evidence such as student samples, assessment scores, and lesson plans. In many of these case studies, the researcher found that teachers do differentiate, but to the

struggling learners, believing that gifted students do not need differentiation because they are going to understand the curriculum (Dimitriadis, 2016). In an article written by Plucker and Callahan (2014), one of the areas of needed research is the social and emotional needs of the gifted children. Another needed research area is that of the effects of ability grouping. There are two sides to the argument on the topic of ability grouping: those who support homogeneous grouping to challenge the higher-level students, and those who support heterogenous grouping, stating that there needs to be all levels in a group to help support all students.

Synthesis of Research Findings

Through the research on gifted education around the world in the last several years, there is a common understanding that the needs of these high-ability and talented students need to be met in the classroom. Dai and Chen (2013) have described three paradigms in gifted education. The first of the paradigms is The Gifted Child Paradigm. In this paradigm, it is assumed that giftedness is a natural human quality that can be measured by intelligence tests. Based on the intelligence (IQ) tests, students who are classified as gifted are offered opportunities to participate in special programs. In a pull-out program, the content the gifted students are taught could be differentiated according to their level and strengths. In addition, when children are identified as gifted, they can interact with non-gifted students in the classroom and gifted peers in the pullout program, strengthening their social-emotional skills (van der Meulen et al., 2014).

The second paradigm is The Talent Development Paradigm, and the goal is to find the individuals who are gifted in a variety of ways, the ways that cannot be identified on an intelligence test. Instead of qualifying students out of being gifted, The Talent Development Paradigm finds the individuals who have different strengths and can outshine others. Matthews and Dai (2014) explained the need to identify gifted students through multiple measures. When

additional measures are used for identification, a broader range of students qualify. Students who learn best in the traditional sense should not be the only ones who qualify; instead, those who have a strength in a different measure of intelligence also have the capability of being gifted. As a result, this means that there is increased diversity in the program. A portfolio assessment could offer a more comprehensive representation of a student's giftedness (Mooij, 2013).

The last of the paradigms is The Differentiation Paradigm, and the focus is to offer

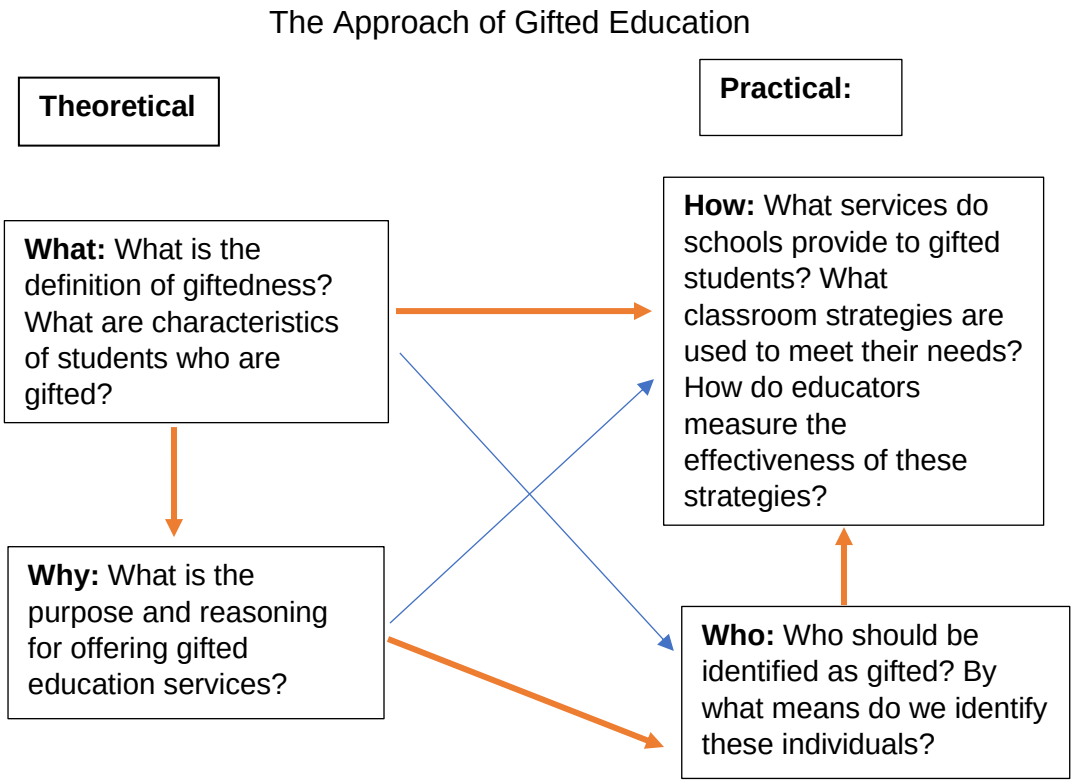

Figure 2: This shows the relationship between the elements to the approach of gifted education (adapted from Dai & Chen, 2013).

curriculum and instruction that has been adapted on a case-by-case basis for each student so that each child is given rigorous content to promote critical thinking and problem-solving skills. Through each of these three paradigms, the who, what, why, and how of gifted education can be explored. Figure 2 reflects the relationship between these paradigms.

Effective differentiation occurs when each student is getting curriculum at their level, to support and challenge their learning. Teachers cannot just begin differentiating overnight; instead, it takes much planning and preparation. Tomlinson, in an interview with Wu (2013), explained that teachers need to be practical when beginning differentiating. They need to think about how to assign multiple tasks to students without disturbing the other students in the classroom. At the same time, when this differentiation begins, the teacher must train the students how to work independently, in partners, in small groups, and in a whole class setting. Expectations must be clearly stated and reinforced each day.

Critique of Previous Research

When conducting research, it is important to identify the strengths, weaknesses, and methodologies used of previous research topics that are similar in study. Based on the research conducted for this review, it is concluded that educators do recognize that there is a need to implement a rigorous and challenging curriculum for the gifted students in the classroom. However, there is a discrepancy as to what this type of educational opportunity will look like in a classroom. There is consensus in the research that there is a lack of teacher preparation and professional development opportunities to prepare the teachers to meet the needs of these students. Imbeau (2017) explained that when she looks back upon her first years of teaching, she recognizes her lack of expertise and empty bag of tools to meet the needs of her students. As a result, those gifted and talented students' needs were not met consistently and effectively. However, because of her teammates, and their desire to improve their teaching practices, she has continued her lifelong journey to establish the best evidence-based practices for gifted students. Educators need to feel supported and given professional development and training opportunities

focusing on students' learning needs in various subject areas and practical differentiation strategies for the classroom (Matthews & Dai, 2014).

One area that is lacking in the research of gifted education is the impact of differentiated instruction in the classroom from the perspectives of students and teachers acquired through interviews and the collection of documentary evidence such as assessments, student samples, lesson plans, scaffolds. It is important to hear the teachers' perspectives on gifted education, as well as the students' perspectives in order to get a clearer picture of the impact of the gifted education offered to students. Kehveci and Akgul (2014) conducted a study on student perceptions of their education in fifth through seventh grades. These students were given eight survey questions with an option of answering "yes" or "no" to each question. Personal interviews were not conducted with these students and documentary evidence was not collected.

Differentiation of instruction can occur through the content (curriculum compacting or acceleration), process (the how the learning takes place), and the product (the final assessment to show one's knowledge: Tomlinson & Murphy, 2015). There are case studies that discuss the content and the need for curriculum compacting and acceleration, placing students in homogeneous learning groups versus heterogeneous learning groups, and there are case studies describing ways of teaching gifted education. In a qualitative case study conducted by Kitsantas, Bland, and Chirinos (2017), students in Grades 5–11 reported a stronger liking to homogeneous groups because there were advantages such as increased challenge, faster pacing, and more complex class discussions. However, there is a lack of research placed on the differentiation of the product. Perhaps the product could be in connection with the 21st century learning skills needed to be successful in high school, college, career, and beyond.

When researching gifted education, there are many studies to show what gifted education is lacking; however, there are not many studies that show what is working in gifted education. One study did, however, focus on the student successes in education. This study was conducted by Tomlinson and Jarvis (2014). This qualitative study focused on the academic successes of students from three different school sites over four years. Through the course of the study, it was determined that only two of the schools met their specific research criteria. Findings from the study showed that student success occurred when the school had a strong character development focus, high expectations for academic achievement, and a schoolwide vision that was consistently and constantly enforced. Teachers spent the time to create bonds with each student, learning about their lives outside of school so that they could make learning experiences more relevant. A high level of respect between students and teachers was built, and as a result, there was a sense of community and trust. Because the teachers understood the individual levels of their students, many times differentiated instruction occurred after the whole-class instruction of the lesson. This was a study that showed the successes in gifted education; however, it is one of the few.

Summary

Gifted students are society's future leaders, doctors, lawyers, scientists, and educators. "The need for a shared vision concerning exemplary curricula for academically advanced learners must be a priority in the field of education" (Beasley, Briggs, & Pennington, 2017, p. 48). The Common Core State Standards cannot guarantee meeting the students' needs through acceleration, enrichment, and depth of content; instead, for students to reach their full potential, they must experience meaningful learning. This takes place when teachers build connections

with the students, encouraging creativity and curiosity through their educational practices (Beasley et al., 2017).

Based on the review of literatures, which develops a unique conceptual framework using Vygotsky's (1978) theory of constructivism and Gardner's (1983 & 1999) theory of multiple intelligences, to understand what can assist gifted students, there is sufficient reason for thinking that an investigation examining the impact of differentiated instruction in the classrooms in grades 3–5 in the area of mathematics, may yield significant findings. The literature review provides strong support for pursuing a research project to answer the following three research questions: How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in Grades 3–5? What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in grades 3–5, as well as the types of support needed to meet their needs? What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students?

Chapter 3: Methodology

Introduction to Chapter 3

The purpose of this qualitative phenomenological study was to identify how differentiated instruction is being used in the classroom during mathematics instruction in grades three through five. The goal of this study was to determine if and how teachers are using differentiated instruction to meet the needs of the gifted students. In addition, teachers were asked how their approach to gifted education has changed over time (if any): prior to 4 years when students were tested and officially identified as gifted, as opposed to more recent years when students are no longer tested and officially identified as gifted. When teachers analyze the interests, strengths, and weaknesses of their students, along with their instructional methods, then teachers can focus on how to best meet the needs of the students. As a result, students are more motivated to learn and be successful in their studies (Watts-Taffe et al, 2013).

According to Vygotsky's (1978) social constructivist theory, individuals often seek to understand the world in which they live (Creswell, 2014). Learning is an active process, in which students learn by participating in the meaning-making process, not just passively being told what to do. Similarly, in qualitative research in the field of education, there is a desire to understand how learning occurs, and why students learn differently (Sullivan & Sargeant, 2011). During these studies, research is conducted in the natural setting, not moving participants to an alternate, unfamiliar setting, where data will not be accurate. Data analysis is inductive, as the researcher is looking for patterns and themes. When the research is finished, the voices of the participants are heard through the data, and the data which has been collected, coded, analyzed, and sorted, extends and supports the literature (Creswell, 2007).

In this chapter, a detailed account of the methods and procedures used in determining how differentiation in the mixed-ability classroom is being used, and what barriers seem to exist that are preventing teachers from implementing it during mathematics instruction in the classroom. In addition, the study's purpose, design, research questions, sample population, data analysis procedures, limitations, and expected findings are specified.

Research Questions

Educators must understand the needs and academic strengths and weaknesses of each of their students. Teaching is far from standing up in front of the classroom and lecturing to the whole class for an hour at a time. The teacher needs to act as the facilitator and guide the students, creating a more student-centered classroom (Keith, 2015). All students have different learning styles, readiness levels, interests, and learning preferences, and in order to maximize learning, the teacher needs to focus on those learning styles. When students are engaged with curriculum that is differentiated to meet their needs, challenge their strengths, and bring up those weaknesses, then they are motivated to keep learning beyond the minimum expected standards, as well as respect other students' learning styles (Tomlinson & Edison, 2003).

When students learn mathematics, some are visual learners who must illustrate each problem, some students are kinesthetic learners who must build with manipulatives, and some students are mathematical learners who can memorize algorithms and thrive on completing mathematical calculations. When teachers use a variety of instructional methods, then students can take charge of their own learning and gain a better understanding of the content in which is being taught. In addition, when teachers vary their instructional practices to match the learning styles of the students, the students are more apt to focus better and be more motivated to learn (Watts-Taffe et al., 2013).

Teachers are at varying levels when it comes to differentiation and its implementation. Some teachers are confident in their ability to meet each student's needs, while others need more professional development on the topic, collaboration time to plan and discuss strategies with colleagues, resources to use for differentiation, or guidance to meet the students' needs and promote diverse amounts of learning (Cha & Ahn, 2014). For differentiation to occur in the classroom, it needs to be supported by the school's administration and become a priority in the schools.

Considering the paucity of evidence available in the literature, the current phenomenological study was designed to investigate the following questions:

RQ1. How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in Grades 3–5?

RQ2. What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in Grades 3–5, as well as the types of support needed to meet their needs?

RQ3. What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students?

Purpose and Design of the Study

The purpose of this qualitative phenomenological study was to identify how differentiated instruction was being used in the classroom in a small school district in Northern California, and how it has changed recently to meet the needs of the gifted students in grades three through five in the subject area of mathematics. Several years ago, the school district stopped testing and identifying gifted and talented students. There was no longer any funding for

testing and identifying students, or for developing specialized programs for these students. As a result, all students were placed in regular general education classrooms; no testing and identification took place, and it was left up to the teacher to figure out how to best differentiate their instruction in order to meet the needs of these high-ability students. In addition, based on data from past standardized tests from students in grades three through five, Mathematics became an academic area of focus for the school district and differentiating of instructional methods to maximize student learning. To investigate this role, a phenomenological study was conducted. This type of phenomenological study allowed for the participant and researcher to have an in-depth interview, openly discussing the phenomena and how it has affected the instruction offered in the classroom (Creswell, 1998).

The school district of study is home to approximately 3,700 students, over 200 certificated teachers, and over 150 support staff. On the dashboard, this school district falls in the high category (green color) for the students meeting proficiency in mathematics, scoring 22.6 points above level three. However, the district's progress is under "maintenance," showing a two-point decline in scores from last year (California School Dashboard, 2018). This district has a variety of students, and their population of gifted students is higher at one end of the district than the other end. However, it is of utmost importance to show the positive impact of differentiated instruction for all gifted learners so that they can not only show academic improvement each year (which will help the district's scores), but to benefit their academic learning and success as well.

Creating a qualitative versus a quantitative study is more effective when discussing the role that differentiated instruction has in the classroom for gifted students. Observing how the students are best learning cannot always be measured by a test score (pretest or posttest). Instead,

how they respond to questions, how they can help others, or sometimes how they build their confidence in the skills they are learning cannot be measured quantitatively. Using teacher interviews and perceptions can be discussed when analyzing the importance of gifted education and the most effective types of support for high-ability learners. With a phenomenological study, a small group of teachers can be included, and their opinions and perceptions about how their differentiated instruction for gifted learners has changed over time since students are no longer tested and officially qualified as gifted will get to be shared individually. The goal of each interview was to allow the participants to take the time to reflect and share their experiences around the phenomenon (Creswell, 1998).

In this qualitative phenomenological study, a selected group of teachers from a school district in Grades 3–5 participated through the means of individual teacher interviews. The goal was to discuss the teachers' classroom experiences with gifted education in the school district. In addition, the participants discussed how differentiated instruction was being used in the classroom, if and how teachers were using differentiated instruction to meet the needs of the gifted students, and how their instruction has changed (if any) since gifted and talented students are no longer tested and officially identified. These in-depth individual interviews yielded information from teachers that can be used to adjust future instructional practices to best meet the needs of gifted and talented students. The data received was not from surveys, where conclusions drawn would have had to be assumed; instead, the data received were comments that teachers made, and where conclusions can be openly discussed.

Research Population and Sampling Method

Participants for this qualitative phenomenological study were chosen from third through fifth grade teachers in a small school district in California. By using a phenomenological study

approach, this provides an opportunity for teachers to describe their experiences with implementing differentiated instruction in the classroom. The focus of a qualitative phenomenological study focuses on the perspective of the participants, based on their classroom experiences. One of the goals of a phenomenological study is to allow the researcher to take all the data collected, common themes, and look at the big picture of a topic. This helps bring meaning to a lived experience (Creswell, 1998).

This phenomenological study will use a non-probability sampling design, choosing participants purposively. There were between 12 to15 teachers chosen purposively for participation in this study. There are five elementary school sites, and three teachers per site were chosen, one from each grade level in Grades 3–5. These are the grades that participate in state testing each year at the elementary school sites, and they are also the grade levels that have a greater range in academic abilities. In turn, these are the grade levels that could benefit from differentiated instruction in the classroom, where students are given the opportunity for more individualized instruction at their level. Each teacher participated in an individual interview. A purposeful sample, or one that intentionally samples a group of people, can give the researcher the most accurate information about the problem in which is being studied (Creswell, 2007). This allows for the individuals who are best suited for the study to participate. The teachers were invited to participate via email. In this email, three areas of the study were addressed: the first is the purpose of the study, the second is the requirements of each participant of the study, and the last is the method in which the participant should indicate interest in participating in the study. All potential participants were encouraged to respond via email to indicate their level of interest. The criteria for chosen participants was as follows: First, the teachers must be currently teaching third through fifth grades at one of the five elementary schools in the district. Second, from the

set of teachers who responded that they are interested in participating in the phenomenological study, three characteristics were taken in to account: their school site (each elementary school site needs to be represented), their number of years of teaching (must be over 4 years: this would allow for the teachers who taught before and after the phenomenon), and the number of gifted students in their classrooms (in order to participate, the teacher must be currently teaching gifted students).

Instrumentation

Qualitative phenomenological research involves using open-ended interview questions for collecting data (see Appendix C). According to the Creswell (1998), a phenomenological study is solely concerned with the experiences and perceptions of the participant. This allows the researcher to direct the interview questions towards the participant's experiences, feelings, and beliefs about the phenomenon in question (Groenewald, 2004). These type of interview studies depend on the researcher spending quality time actively listening during each interview, and then reflecting upon the meaning of the data collected when analyzing the field notes from the interview. This allows for each interview to be looked at more in-depth, allowing for opportunity for learning to take place through open-ended discussions. Individual teacher interviews are the primary source of data collected for this phenomenological study.

Individual teacher interviews were conducted. One-on-one interviews allow the researcher to probe individual experiences, which encourages participants to self-reflect on the topic being discussed (Breen, 2006). Individual interviews were conducted to brainstorm different ways to effectively vary instruction to better meet the needs of the gifted and talented students, as well as gain feedback on how (if any) methods of differentiated instruction have occurred with the gifted students. In addition, individual teacher interviews allow the teacher to

reflect upon his/her teaching and discuss the impact of differentiated instruction and how it relates to the current unit of study. During each 25–30-minute interview, there were eight open-ended questions that were asked. The goal of these open-ended questions was to listen to the participants and then shape questions for future interviews and focus groups to gain additional information (Sullivan & Sargeant, 2011).

All the interviews were recorded and transcribed, and then each participant had the opportunity to review the transcription to check for accuracy (member-checking). Each participant was given a typed transcription within one week of each interview. If there were any errors, they were corrected immediately. Prior to the interviews being conducted, experts in the field of gifted education reviewed the interview questions to assure that the questions match the study topic in a way that the data collected will assist in answering the questions.

Data Collection

Prior to conducting this study, approval was obtained through the Institutional Review Board (IRB) at Concordia University–Portland. Because this study involved interviewing real teachers, it was important to protect each participant, so the confidentiality of each participant was of utmost importance. Therefore, the superintendent and assistant superintendent of the local school district wrote a formal letter of permission to conduct this case study. This letter of permission was submitted to the IRB for approval.

Once all permissions were granted, then the qualitative phenomenological study began. The first step was to send out an email to all third-grade through fifth-grade teachers in the school district describing the study and asking for their participation. This email included 42 teachers and five principals. It is important to include the principals so that they are aware of the case study that was being conducted. The deadline to respond for participation was 1 week.

Based on the interest in participation received, there was going to be no more than four teachers per site selected to participate in the study. Ideally, there would have been three teachers per site (one from each grade level). If there were multiple teachers of the same grade level who volunteer per site, and all participants filled the qualifications, then the participant was chosen at random.

To begin the phenomenological study, individual teacher interviews took place. A 25–30-minute interview was conducted with each participant, focusing on their perceptions of differentiated instruction in the classroom. Each one-on-one interview was formatted as a structured interview, where at the beginning the researcher asked the participant a series of questions, as the researcher had very specific objectives for the type of information sought (Seaman, 1999). At the end of the structured set of questions, there was time for open-ended discussion, allowing the participant to reflect upon his/her gifted teaching experiences (Creswell, 1998). Interview questions are included in the appendix. After each recorded interview, member checking took place to ensure that the interview was accurate.

At the end of the interview study, once all the data was collected and analyzed, a meeting was set up with the superintendent and assistant superintendent to go over the findings. This meeting was not a source of data collection; instead, this was just a meeting to share data. Names of all participants and schools were kept confidential. This is the final interpretive phase where the lessons learned from the study were presented (Creswell, 2007).

Identification of Attributes

There are many different types of students who make up a classroom. The focus of this qualitative phenomenological study involves gifted students. In the school district of study, gifted and talented students (GATE) are no longer identified through a test: they previously had

to score advanced on the standardized math and language arts test and then score 95% or higher on the Otis-Lennon School Ability Test (OLSAT) in order to qualify as gifted. Currently, gifted students are classified (but not officially identified with a label) as students who score above proficient on the Smarter Balanced Assessment (SBAC) in both language arts and mathematics.

Data Analysis Procedures

There was a substantial amount of data to analyze from the individual interviews. Data analysis began after the initial individual teacher interviews were conducted. Each interview was recorded and then transcribed. After each interview was transcribed and member-checked, the data was coded and then sorted into categories by common themes. It was important not to wait until all the data was collected to code, and there was an abundance of data collected. Instead, Seaman (1999) suggested to code one section of notes at a time, allowing the researcher to code chunks of data collected. Responses from interviews was subjective (both participant responses and observer reactions), which were critical to the findings (Sullivan & Sargeant, 2011). When analyzing field notes from individual interviews, Breen (2006) suggested to separate the data into three different categories: the most important themes, the most noteworthy quotes, and any unexpected findings.

When examining data, a content analysis was conducted. This means examining data for recurring instances (Wilkinson, 2016). Initially, when coding the data, the data fell into one of three categories. The first category is data that represents information that was an expected outcome, the second category is the data that was not an expected outcome, and the third category was data that was found potentially interesting or unusual (Creswell, 2007). Coding is very cyclical, meaning that the researcher will always come back to analyze and recode the data. Beginning with the first cycle of coding, this could range from a single word to an entire

sentence or thought. After this first set of coding was completed, a second cycle of coding took place, where specific words and phrases were coded with the exact same units. As a researcher, it is important to understand that coding can summarize or condense data, but it will not necessarily reduce the amount of data. Coding is a judgment call, as coding is the initial step towards a more strenuous analysis and interpretation of data. Coding is not just about labeling data. Instead, it is about linking the data collected to an idea, and then the researcher will take the idea and draw a conclusion about its findings (Saldaña, 2015). After this initial coding, then further analysis and designation of more specific codes can be assigned to the data. Similar codes were grouped into similar themes. Finally, there was an analysis of those themes and explanations were grounded in these similar themes. At first, coding was done by hand, with a set of preset codes (10–15 codes that have a predetermined meaning prior to coding taking place). Precoding took place, where any participant quotes or passages that were worthy of attention could be circled, highlighted, bolded, or underlined, so that they stood out when more data is collected and analyzed (Saldaña, 2015). Once the transcript was typed, then emergent codes were written in the margins. It was important to keep a running list of the meaning of each emergent code along with the preset codes. When all data was collected, then similarities between preset codes and emergent codes were analyzed, looking for common themes. Data were stored in Microsoft Word documents. Once all the data had been transcribed in Microsoft Word, then NVivo 10 was the coding software used.

Limitations and Delimitations of the Research Design

Limitations of this study revolved around the geographic area in which the elementary schools are located. Due to the small/unique sample available for the study, results may not be transferable beyond the specific population from which the sample was drawn. Two of the

elementary schools are Title I schools, where federal funding is given to the schools to meet the needs of students who of a low-socioeconomic status. Three of the elementary schools are affluent schools. The results of this study may not be generalizable to schools of other areas.

Another limitation is due to the timing during the school year of the study. As the school year concludes, fewer respondents may be available during the recruitment period of the interview study. Teachers may want to participate at the beginning of the study, but they may have to exit the study before it is over.

A third and final limitation is due to the failure of sample respondents to answer with candor, and as a result, results may not accurately reflect the opinions of all members of the included population. The school district in which the case study takes place is a small school district, and although there is full confidentiality of the participants and the data in which is collected, some participants may still not give a full and accurate account about their perceptions of the role of differentiated instruction for the gifted students.

Delimitations of this study include sampling and focus concepts in mathematics. The sample of this study focused on Grades 3–5, instead of including all grades in the district. If the sample size is not limited, the study will become too large, and accurate data will not be collected. The focus in mathematics stems from a district focus on improving mathematics instruction to raise students' understanding. Based on data from past state standardized tests, Mathematics has become an academic area of focus for the school district, and differentiating instructional methods can maximize student learning.

Validation

Credibility. Credibility, or trustworthiness, is described as research being believable and accurate from the participant's eyes (Trochim, 2006). The credibility of the qualitative research

is directly based on the ability and effort of the researcher (Golfshani, 2003). During this phenomenology study, measures of credibility will take place. One such measure is to member-check. When interviews were conducted, they were recorded and then transcribed. This transcription was given back to the interviewee to check for accuracy, and any errors were fixed immediately. Data were also triangulated because there is more than one way of collecting data. Method triangulation is important, as it confirms the validity of conclusions drawn through the means of interviews and field notes (Seaman, 1999). Triangulation is used to clarify meaning, as there are different ways that the phenomenon can be seen from different participants, and it is of the utmost importance for the researcher to interpret the data collected accurately (Stake, 2003). By using multiple methods of data collection, this ensures the validity of the study.

Dependability. Dependability is described as the reliability of the consistency of the data collected. During the research process, the confidentiality of each participant must be ensured, and the personal bias of the researcher cannot be showed. Each participant was given a letter in order to keep the data collected from their interviews confidential and without bias. Steps were taken to verify that all items, raw data and process notes, were consistent and accurate (Golafshani, 2003). All field notes from individual interviews were coded consistently and accurately throughout the entire qualitative phenomenological study.

Transferability is described as the ability to transfer the research and its results in a different setting. For this to take place, a high level of detailed descriptions must take place when describing and analyzing this study. All details, descriptions, and analyses of the study were kept electronically so that no details were forgotten over time. It is the job of the researcher to make the judgment as to how sensible it is to transfer to a different context (Trochim, 2006). Although transferability can be difficult, as there are many exceptions that can be made when transferring

the study to a different location, it is imperative for the researcher to conduct honest and valid research (Stake, 2003). Confirmability describes how the research findings are supported from the collected data. Every researcher has a bias, and confirmability refers to the degree in which the findings of the study can be confirmed and corroborated (Trochim, 2006). To ensure the information collected is analyzed accurately, field notes from all individual interviews were triangulated and then coded consistently. Coding was initially done by hand, precoding data as it is collected, highlighting any significant quotes or passages that stood out. Once the transcript of interviews had been typed, then emergent codes were written in the margins as the data was analyzed. These are codes that were created with similar themes as the data was read and scrutinized. A running list of both pre-set and emergent codes were kept so that all the data was accurately analyzed. After all data was logged in Microsoft Word, then the coding software NVivo 10 was used to horizontalize the data. All participants were given the findings from the study so they could verify the accuracy of the interpretation of the results.

Expected Findings

As previously described in the literature, the need for differentiated instruction is crucial to building self-advocating and motivating students. Although most teachers know and understand the need for varying their instruction for different learners, the reality is that in the classroom differentiated instruction does not always take place for several different reasons. One reason is that teachers lack professional development on how to differentiate to meet the needs of all the different learners. Another reason is the lack of time to plan and prepare as a team for everyone's needs. As the plans are beginning to be put into place for this interview study, it is expected to find similar findings to the literature.

Ethical Issues

Conflict of interest assessment. As a colleague, the participants must feel safe; researchers must follow the rules to protect the participants of the study. There cannot be any risks to the well-beings of the teachers participating; they cannot feel that their careers are at the risk of negative exposure (Stake, 2003). It is important to make the participants feel that they can trust that the researcher will not receive any professional advantages (promotion or public recognition) based on the findings from the study (American Psychological Association, 2017).

Researcher's position. The researcher believes in the importance of differentiated instruction in the classroom. However, it is important not to show bias when analyzing and interpreting the data collected. During qualitative phenomenological studies, it becomes imperative that the researcher set aside biases and preconceived assumptions about human experiences, feelings, and responses to a particular phenomenon (Creswell, 1998). This ensures that accurate information during individual interviews can be collected.

Ethical issues in the study. This qualitative phenomenological study involves human participants; therefore, there are three possible ethical issues that could take place: informed consent, right to privacy, and honesty with professional colleagues. Before beginning this phenomenological study, the school district superintendent wrote a letter of permission to conduct this qualitative study. This letter was submitted for approval through the IRB at Concordia University–Portland. Because the confidentiality of each participant is of the utmost importance, all the teachers were labeled using pseudonyms, for example "Respondent A (RA), Respondent B (RB)" and so on. In addition, all participants agreed to be honest and open about their feedback in order to make the results of this study accurate. It is important for the participants to build a positive rapport so that respondents are honest and confident in the

feedback given (Creswell, 2007). It is understood that any of the participants can withdraw from the study at any point in time. There was no deception in this research, meaning that there are no consequences as a result of the outcomes for any of the educators participating. There was no monetary compensation for any participants. All of the data collected: recordings of interviews, transcriptions of data, NVivo coding, has been secured through a passcode on a computer. All actual names have been removed from all data collected and replaced with pseudonyms.

Chapter 3 Summary

Each student learns differently, and when the educator differentiates instruction, then the students can take ownership of their own learning and create their own educational pathway. Classrooms are a diverse place, as there are different types and levels of learners, and one way to honor the uniqueness of each student and maximize their learning potential is through differentiating instruction (Watts-Taffe et al., 2013). Gifted students need more learning opportunities than what are presented in the general whole-group classroom setting. They need instruction that will challenge their minds, requiring them to think critically to solve real-world problems, giving them opportunities to see the world from more than one perspective (Scott, 2014). Through this qualitative phenomenological study, identifying how differentiated instruction in the classroom is being used to meet the needs of the gifted students was identified. Using individual interviews, field note data was collected, hand-coded, analyzed, and sorted into common themes. The goal of this study is to identify if and how teachers are using differentiated instruction in the classroom to meet the needs of the gifted students. In addition, feedback is desired on how gifted instruction has changed over time (if any): prior to four years when students were tested and officially identified as gifted and talented, and in recent years since the school district no longer tests and officially identifies gifted and talented students. Chapter 4 will

go on to discuss the results of the study through an analysis and interpretation of the data collected. Chapter 5 will discuss the conclusions based on the results of the qualitative phenomenological study regarding how well the problem presented earlier was addressed.

Chapter 4: Data Analysis and Results

Introduction to Chapter 4

Inside an elementary school classroom, there are a variety of academic levels of students. Due to this diversity in the classroom, teachers need to differentiate instruction to meet the needs of the students. Watts-Taffe et al. (2013) stated, "Effective differentiation is not found in a basal series or even in a particular research-based instructional strategy. It is found in the decisions that teachers make" (p. 306). The purpose of this qualitative phenomenological study was to explore the practical classroom experiences of teachers with regards to utilizing differentiated instruction with high-ability learners. Teachers who had taught in the school district for longer than four years were interviewed so that they could share their experiences with gifted education while working with students who were tested for GATE and after this testing stopped. In addition, teachers discussed how differentiated instruction was being used in the classroom in grades three through five in the subject area of mathematics. Through individual interviews with teachers throughout the school district, the goal was to identify strategies that teachers used to differentiate instruction to meet the needs of the gifted students. Teachers first described gifted students and what differentiated instruction meant to them, including its role in the classroom. Each teacher described their classroom experiences with meeting the needs of the gifted students, as well as the different types of support that were needed to better serve those students. During each interview, teachers also explained what is needed to more effectively deliver differentiated instruction to the gifted students. In addition, teachers described various professional development opportunities that could improve their differentiated instructional methods in the classroom.

The gifted students' brains need to be challenged as well as the general population. Scott (2014) explained that in addition to the standard curriculum that is offered in the general education classroom, gifted instruction needs to be differentiated through its "depth, breadth, pace, and complexity of content" (p. 964). Although most teachers know and understand that there are different needs of the students in their classrooms, they do not always effectively differentiate their instruction for the students. During this study, the focus was on third-grade through fifth-grade teachers in the school district where the teachers discussed effective and ineffective instructional strategies for differentiating instruction for the gifted students, and what resources and professional development opportunities would be beneficial to better meet the needs of the gifted students. As the researcher, it was of utmost importance to keep their confidentiality throughout the study. There was no personal or professional gain based on the results of this study.

In this chapter, the qualitative phenomenological study will be reviewed, the sample of teachers who participated will be described, the research methodology will be stated, and data and results from the interviews will be presented in relation to the research questions of study. Chapter 5 will summarize and briefly discuss the results, relate the results back to the literature and theoretical framework, discuss limitations that occurred during the study, discuss how the results could impact practice and policy, and offer recommendations for further research.

Description of the Sample

The sample of teachers who participated in this study consisted of 17 teachers across five elementary schools. After the study was given IRB approval, an email was sent to 42 teachers in the school district who taught third, fourth, and fifth grades. Out of that original email, there were only three teachers who responded that they would participate. As a result of the low

number of respondents, and the timing of the recruitment being so close to the end of the year, a second email was sent out to individual teachers from each of those grade levels at each school site describing the study and requesting participation. From that second email 15 more teachers agreed to participate, for a total of 18 participants. However, one teacher had to leave the study due to her vacation, and not being available when the study was taking place. The breakdown of participants is as follows: five third-grade teachers, two fourth/fifth combination teachers, three fourth-grade teachers, six fifth-grade teachers, and one English language teacher who teaches all three grade levels. There were 15 female participants and two male participants. Each of the participants had more than 4 years of teaching experience.

Research Methodology and Analysis

To collect data for this qualitative phenomenological study, individual interviews were conducted. Teachers in Grades 3–5 were emailed describing the focus and asking for their participation in this study. Times were scheduled to conduct the interview, either in-person or over-the-phone. Each interview took between 20 and 60 minutes to complete. At the beginning of the study, teachers were thanked for their participation, the purpose of the study was described, and then the interview questions began. Each interview was a conversation where the researcher asked the initial question, the participant answered, and then follow-up questions occurred to give the researcher more data. When each interview was over, the participant was thanked for their time. The researcher transcribed the notes from the interview and sent a typed copy of the notes to each participant within 1 week. The purpose of this is to member-check the data, allowing the participants the opportunity to verify that the information gathered was accurate and give their feedback for any inaccuracies.

Once the data were collected, transcribed, and member-checked, the process of content analysis and coding began. The researcher read each transcript, looking for similar words or phrases that could be used to code the data, looking to separate the data into three categories: expected outcomes, unexpected outcomes, and data that was potentially interesting or unusual (Creswell, 2007). After reading each transcript multiple times, precoding took place, where codes were assigned to similar words or phrases (Saldaña, 2015). After pre-coding took place, then emergent codes were written in the margins of the typed transcriptions. After the codes were established, then the data could be separated into different categories. Once all the categories of data were established, then common themes were created (Saldaña, 2015). Although the coding process began by-hand, the interviews were transcribed into Microsoft Word, followed up by using the coding software NVivo 10.

Each participant took part in an individual interview, focusing on the topic of gifted education and differentiated instruction. The goal of each interview was to discuss the teachers' practical classroom experiences with gifted education in the school district. In addition, the teachers provided feedback about strategies that are used for implementing differentiating instruction in the classroom. Teachers also shared what resources and professional development opportunities would be helpful in meeting the needs of the gifted students.

Summary of the Findings

All teachers who were interviewed had a common understanding of gifted students. They described gifted students as those who thought "outside the box," ones who could master the basic grade-level content easily but needed to be challenged academically. "Ideally, differentiated instruction is when all students are met at their academic level and challenged to meet and exceed all grade level standards" (Respondent E (RE)). Respondent K (RK) described

gifted students as those with "high potential that is not always maximized, and as teachers, we need to maximize the potential for all students to get the closest to achieving and exceeding the standards." Respondent N (RN) described a gifted student as one who "shows abilities far beyond their developmental years, one who has an intense curiosity about a particular subject or learning in general." Respondent P (RP) referred to a gifted student

> As one who is advanced, not only academically, but perhaps in his or her critical thinking (reasoning) ability, creativity, and/or artistic ability. He/she is able to view a problem from different angles and will usually find its solution in multiple ways or at least differently from his or her peers.

Respondent B (RB) described a gifted student as "a student of significantly higher cognitive abilities; one who doesn't just learn but can work well with the content and take it the next level. Often, these are the students who know the content even before you finish teaching it." Respondent C (RC) emphasized that a gifted student is one who does not think like others, and they are the ones who typically struggle with having to explain their thinking.

> We have to teach the gifted students how to persevere when they are challenged by a skill that they are not used to learning. For example, a gifted student may be very good at solving a difficult math problem, but then they freeze up when it comes time to explain the math problem to others.

A common phrase that teachers from all school sites kept using was that content for the gifted students needs to "go deeper," instead of giving more work for gifted students to complete. Respondent F (RF) referred to this strategy of "piling on" ineffective, stating, "This is just giving the gifted students more work because they are smart. The gifted students will quickly get bored with more work and start to feel bad because they have so much more than everyone

else." RN stated, "More work tires out the students, it needs to go deeper." Basically, just because a student is gifted and talented does not mean that they should do twice the amount of work. Instead, these gifted students should be challenged academically by having to explain their thinking and use critical thinking skills to solve project-based and real-world problems.

Respondent A (RA) defined differentiation as "teaching in such a way to hit learning for all students, really challenging the students academically." RK explained that when differentiating instruction for the gifted students, this can be done through varying the delivery of instruction or varying the final product that is expected to show mastery. RB differentiates by giving the students a menu of options; "My gifted students will receive a similar assignment to the rest of the class, but there are different ways to learn the material and different final products to show their understanding." Respondent O (RO) offers a choice in product and content, meeting the students where they are academically and challenging them to motivate them to keep learning. Respondent H (RH) differentiates by teaching to the middle level of her students and pulling small groups to help struggling learners or challenging gifted learners using enrichment materials. RP defined differentiation as "teaching students lots of strategies for solving problems as well as allowing them to work with and learn from their peers." RP explained the importance of having students collaborate with each other to solidify the concepts being taught by explaining their thinking processes to someone else.

Participants also understood that they are obligated to meet the needs of the gifted students; however, most participants described that students who exhibit poor classroom behavior and those who have Individual Education Plans (IEPs) often times take precedence because there is an immediate need to take care of these students. Respondent D (RD) stated, "Behavior trumps being able to truly differentiate for my gifted students. If a student is blowing

out, I must deal with that student's behavior, and as a result, the gifted student may not get their individualized instruction for the day." RE explained, "There is so much pressure to get non-proficient kids proficient, that is all I have time for in my classroom. Unfortunately, the gifted students take the back-seat because they have already shown mastery of the content standards." Respondent J (RJ) explained that as teachers, with all different levels of students, we need to know and understand their needs. "For below-grade level and resource students, we need to get them more practice, more time on any given concept. For gifted students, we need to take them somewhere beyond. We need to add to the ideas that they already have."

Presentation of the Data and Results

This qualitative phenomenological study centered on three research questions:

RQ1: How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in Grades 3–5?

RQ2: What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in Grades 3–5, as well as what types of support needed to meet their needs?

RQ3: What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students?

Participants provided the data that was analyzed through individual interviews. From the interview data collected, common themes were presented around each research question.

Research question 1: How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in

Grades 3–5? There were three common themes based on this research question: small group instruction, use of technology, and meaningful mathematics experiences.

Theme 1: Small group instruction. One common theme to successfully differentiating instruction during the subject of mathematics was with the use of small group instruction. RK explained that small groups must be levelled to target the needs of each of the students. RA explained that when students are split into homogeneous groups, and moved through stations, there is opportunity for one of the groups to receive small group instruction with the teacher. Often, the small groups that RA uses are: station one, math with technology; station two, a paraeducator using task cards for the students to complete, and station three, a math lesson with the teacher. These groups must be fluid-leveled groups, so that students can move between groups depending on their mastery of a content standard. When working in small groups, the focus is on going deeper, not just a mastery of computation problems. RA explained that students are given strategies to attack word problems, so they can explain their thinking and show their understanding, which will allow them to dive deeper into the standards.

RC described that in her small-group instruction, students are placed homogeneously, where the level of instruction can meet the student's abilities. During this time, RC works to get her student's away from the "I already know this" mentality by giving the students deep-thinking activities to complete. RE uses many puzzles and critical thinking games in her small groups to differentiate for the gifted learners. One activity that she has implemented is called Pentaminos, which are puzzles and games where students must think critically to solve the problem.

RH discussed that an effective instructional strategy for teaching students is small group instruction. However, she groups the students heterogeneously, so that each of the different levels of students in each group adds a different perspective. Small groups in her classroom are

fluid, meaning that they can be changed from concept to concept. Students can move in-between groups based on their understanding and mastery of the concepts. She explained that often when a student has difficulty learning a new mathematics concept from the teacher, another student can explain it even better, using different words and a different approach to the same problem. RH described that when placing her students in homogeneous small groups, the struggling learners have been characterized as "being dumb." Because of this, when placing her students in academic small groups in her classroom, most of the time, she will use the instructional tool of heterogeneous groups.

Respondent I (RI) described that the instructional strategy of small groups has been priceless for her gifted students. "I encourage my students to have fun with math. If they do not enjoy math, they will just act out during math, and then I have bigger problems on my plate." This teacher divides the students into leveled groups that are homogeneous, giving them challenging work to complete. This work could include activities to complete as a team, or individual worksheets that focus on problem-solving activities. During small group rotations, RI explained that her levels consist of: struggling learners (their focus is solely skill-based, where the students are practicing the steps of the algorithm); the on-grade level students (their focus is on problem-solving through multi-step problems and word problems); the advanced students (their focus is on enrichment activities. One such example is to find the missing digits in a multiplication, division, or fraction problem).

RN described the use of small groups as an effective instructional strategy for meeting the gifted students' needs. She explained that she places her students in heterogeneous groups based on skill set, interest level, and students' passion. "When my students are placed in groups based on their skill set, interest level, and students' passion, then they are able to take the

mathematics concept farther and deeper, at a faster pace." In these small groups, students must work together to solve a problem. She gave an example of learning positive and negative numbers, using a number line with manipulatives. She will introduce the new concept, and then will set them off to work to explore and create the mathematics rules that they learn through discovery.

RO described her implementation of small groups during mathematics as one instructional strategy to meet the gifted students' needs. In her classroom, she breaks her students into leveled mathematics groups, where each group moves at a different pace. These are fluid groups, so if a student is showing mastery, he can move into a higher group, and if a student is struggling, he can move into a lower group. The advanced mathematics group moves faster, and when they are finished with the grade level standards, they begin to introduce the standards covered in the next grade level. RB also uses homogeneous small grouping in mathematics. "Competition works well for my students." When the students have mastered the grade-level academic content standards, then they can look at the challenge questions from the current adopted text, along with the next grade level's curriculum. "These are the students who are typically on the Advanced Pathways Math track for middle school." RB explained that often, this method of differentiating instruction for his gifted students works well because the students feel like they are getting out of completing the basic content standards, which makes them feel special. Respondent G (RG) explained that in her small groups, the gifted students are given the opportunity to go deeper and farther into the curriculum. "They spend much of their time tacking word problems: breaking them down, solving them, and explaining their thinking to their peers." In some cases, when mastery of current academic content standards has been met, then the small group of students can go into learning the content of the next grade level.

Respondent Q (RQ) explained that her groups for mathematics instruction are homogeneously leveled, based on a mastery of mathematics skills. These groups are fluid, and students can enter and exit groups based on their mastery of each content standard. She explained that leveling the students for mathematics allows the advanced group of students to dive deeper into the curriculum and cover standards outside of the grade level that are both interesting to the students and challenge their way of thinking.

> I want my students to be taught at their level for math, but I also want them to be challenged. The hope is that my gifted learners are motivated to continue their mathematics career and follow the advanced pathways course in middle school. I love to see many of my students take seventh-grade math as a sixth grader.

Theme 2: Use of technology. The use of technology has the capability of helping the teacher differentiate instruction because online programs offer individualized instruction and diagnostic assessments, that can constantly diagnose students' mastery of concepts. RP stated, "One-to-one devices for all students would be fantastic for many reasons, but especially for self-guided instruction." RC explained that there are three online programs that she uses in her classroom with her students. First, the program Khan Academy offers more in-depth skills, including work problems. This program offers students the capability to show mastery through the course completion circle graph. Second, IXL is more like the Smarter Balanced Assessment questions. In this program, teachers can either assign the students lessons to complete, or students can choose from the 200+ concepts they would like to learn. Lastly, the third online program that RC talked about was ST Math. This is a visual program, where students must figure out the patterns in order to solve the problems. RC stated, "Although the gifted students dislike

ST Math, it requires them to critically think about how they would solve the problem, which takes their thinking out-of-the-box."

RE explained an effective practice that she uses with technology in her classroom. Once a gifted student has shown mastery of the mathematics concepts being taught, she has them work on the next grade level's standards on Khan Academy. This program allows the students to watch videos when students are unsure how to solve a problem. It also allows them to work at their own pace. RQ also confirmed that this practice happens in her classroom as well, but with students who were two years older. RQ stated, "It allows the students to have a preview of the concepts when they get to sixth grade, and they are working on middle school mathematics." RQ explained that when students are given this opportunity to learn the concepts ahead (and they have already shown mastery on their current grade-level standards), then their self-confidence increases, along with their motivation to learn higher-level mathematics.

RA explained that technology is used as one of her small group rotation stations for her students during mathematics. The students are given an assignment to complete on ST Math, which is usually a spiral review, with the goal being for the students to practice and retain the concepts previously taught. RD also uses technology as one of her stations in her small group rotations. RD has the students earn their green light on Reflex Math before moving on to their assignments on IXL Math. Having the students use both programs allows them to practice their math facts on Reflex and then practice the concepts on IXL. "The best part about IXL is that the program will assign the students recommendations based on their ongoing diagnostic assessment. It is an automatic tool of differentiating" (RD). RD also explained that students must be taught how to properly use the technology programs for their benefit. This is done by having the

students work out the problems on scratch paper or a white board prior to entering the answer on the computer.

> The gifted students do not necessarily like showing their work before answering the problem on the computer, but it ensures their answer is correct. My gifted students really dislike getting problems wrong, and so this is a tool to help them get the answers correct. (RD)

RG also incorporates the use of technology into her small group rotations. She uses IXL to have the students practice the skills they have been previously taught. “The diagnostic assessment is so helpful because it will show me what skills the students have mastered, what skills the students are struggling with, and what concepts the students are missing or have never been taught” (RG). Additionally, RG uses the Go Math online tools to differentiate instruction for the gifted learners. She will assign enrichment exercises for the gifted learners to complete online where they must show their work and explain their way of thinking.

RJ explained that her incorporation of technology not only occurs in her small group rotations as “tech time,” but also occurs in the school’s “Makerspace Lab” through abstract concepts that come to life in games. There is an Osmo Game, where the students must look at patterns and puzzles and use shapes to solve problems. There is a Tumbler Marble Run game where the students must use their math skills to build the tumbler correctly so the marble will successfully go through each step. “Giving the gifted students these extra learning opportunities will allow them to think critically to solve the problem at hand, but also give them a glimpse of their future as engineers, contractors, and computer designers” (RJ).

Theme 3: Meaningful mathematics experiences. Teachers explained that gifted students must participate in meaningful mathematics experiences, which include peer coaching and

project-based and reality-based learning activities. RG explained that giving the gifted students a packet of worksheets is completely ineffective, while giving the students a project-based learning activity is quite effective. RG uses Teachers-Pay-Teachers (TPT) for project-based learning activities that will keep the students engaged, working on critical thinking and problem-solving strategies, and covering the academic content standards. RQ also uses reality-mathematics activities quite often in her classroom; "Students have to know how to order off a menu, add up the total amount of items, and calculate the expected change from the order. These are real-life skills that students need to know." She went on to describe the Menu Math and Career Math activities that her students complete.

> The goal is that all students, not only my gifted students, will know how to walk into a restaurant, order and pay for their food, and make sure to mentally have enough money for their order. The same also holds true for the grocery store. (RQ)

Although these activities are great for all students, they keep the gifted students motivated and excited to learn mathematics. Suddenly, there is a reason for solving the problems that are set in front of them.

RI described a peer math coaching experience as being successful in her classroom. This system is like a peer teacher, but it works opposite to the traditional model where the gifted students are paired with a struggling learner, and the gifted learners must teach the struggling learners. Instead, the two students are paired together, and they work on solving the problems together from the start. This allows the students time to discuss the problem, and how they would solve it. If one of the team members gets a different answer, they can work on finding the error in the calculation before moving forward. By using a peer coaching method, a student cannot

come to the teacher and say, “I got the wrong answer. What did I do wrong?” Instead, the students must work together to solve the problem and find the error.

RE described her peer coaching student experience a little different. She explained that when students are completing word problems, focusing on problem-solving strategies, after the students are given the opportunity to work through and solve the problem, they are given an opportunity to come up to the Elmo and present their solution. In this situation, the students are teaching their methods used to solve the math problem to the rest of the class, or in some cases, small groups of students. This gives all the students the opportunity to learn the methods used by their peers, and in some cases, this helps the students who cannot quite understand the teacher’s explanation. This also allows the student to act as the teacher, solidifying the content knowledge even more.

RG also uses a peer coaching model in her classroom. In her case, the gifted students peer tutor the struggling learners; “This shows whether or not the gifted student truly understands the concept.” She explained that it is very typical for the gifted student to just give the struggling student the answer, and to avoid that situation; she works very hard with her class the first part of the year on what an acceptable peer partner looks like and sounds like. RJ explained that when she pairs a gifted learner with a struggling learner, the gifted learner acts as a mentor: “I have trained my students so that they are not concerned with the answer. Instead, they want to know the how and the why behind solving the problem.” She said this helped get her students away from just giving her partner the answer when they were paired together.

RJ explained that by providing opportunities for students to engage in meaningful mathematics, the understanding of a concept is solidified. She described the process of giving the students Task Cards to complete. In her classroom she puts Task Cards up around the classroom

and then gives the students an answer sheet (to work out the problems) and a clip board. Students are instructed to complete each of the problems in a certain amount of time. She teaches the students that if there are more than two people at any given card, they must move to another card before coming back to it. “Allowing two students to be working on a problem at the same time will give them the opportunity to talk about the problem, improving their communication skills, as well as their mathematics skills” (RJ).

RQ also uses this strategy in her classroom, and she stated, “It is amazing the amount of growth that the students show when given this activity. It gives the students the opportunity to get up and move around (helping with those kinesthetic learners), but the students go from approaching the concept with hesitance to mastering the concept, as they are helping others when they get stuck.” In addition, RQ explained that during this activity of task cards the gifted learners will find a way to complete this activity the fastest. They will often go around to each card, write each problem down, and then go back to their seat to complete their work. “Sometimes you will see a huddle of gifted students completing the problems and checking their work together” (RQ).

Research question 2: What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in grades 3–5, as well as the types of support needed to meet their needs? There were three themes based on this research question: A need for collaboration with colleagues focusing on gifted education, giving gifted students individual attention to challenge them academically, and the need for socio-emotional support for gifted students.

Theme 1: Additional collaboration time. There is a need for additional time to collaborate with colleagues to plan curriculum and create projects and assessments so that

instruction for the gifted students is meaningful. RA discussed the importance of collaboration with colleagues, so that each teacher can plan out what each gifted student needs to be challenged. “I suggest that we take some of our Wednesday collaboration times and use those as ‘Professional Time,’ where we can plan out instructional strategies, project-based units of study, and meaningful mathematics experiences for the gifted students” (RA).

RD explained that teachers need the time to work with colleagues on creating effective extension activities, activities that give the gifted students the opportunity to think deeper, not just giving them more work. RD suggested the use of project-based learning activities and mathematics games. These games would give the students the opportunity to show their math skills through an interactive game with another student. “Contig is a game that my students love to play, but the only way that I found about it is through collaborating with my colleagues. Students must practice their interpersonal skills while completing math problems. We need more time to have to plan together in order to create meaningful math experiences for our gifted students” (RQ).

RI expressed her concern about finding resources that are motivating and engaging for the gifted students because she understands the necessity to have these resources for these students but lacks the knowledge of where to find them. “Collaborating with colleagues would give teachers the opportunity to work together to find or create projects and activities for the gifted students” (RI). RP stated, “Teachers need unstructured opportunities to collaborate with their colleagues. They can glean a lot from other teachers, but they seldom have the opportunity to do that.” In addition, during collaboration time teachers could look for and become familiar with curriculum and programs that they can be implemented with their gifted students (RP).

Respondent M (RM) described the need for collaboration with colleagues to plan and create games and activities for the gifted students. “We each do not have a significant number of gifted students in each of our classes. It would be helpful to be able to collaborate with colleagues to create projects or activities that we could bring back to our classroom” (RM). RN expressed her need for increased planning and collaboration time with colleagues to plan for gifted students because, as there has been an increase in class sizes, there has been less time to plan for these gifted learners. RO explained her need for time to collaborate with colleagues is needed to move grade level schedules around to form groups of students to better meet the needs of the students.

RO discussed the importance of collaborating, not only with grade level colleagues to plan for the gifted students, but also the need to have collaboration meetings of vertical alignment. This will give teachers of each grade level time to talk about instructional strategies that are used to meet the gifted students’ needs. This will also give grade levels opportunities to create project-based learning activities and meaningful math experiences. RQ supported this idea of vertical collaboration, as it is helpful to know what the students are expected to master in the next grade level, as well as the previous grade level so that the teacher can create projects to extend the students’ thinking.

Theme 2: A focus on the gifted students’ needs. Gifted students deserve the attention of the teacher, and they also need to be challenged academically. RC explained that one ineffective strategy for meeting the needs of the gifted students is to teach a mathematics lesson whole class, where the same lesson is taught to all students regardless of academic level.

> Gifted students must have the attention of the teacher, as their focus and motivation lack if they are expected to always work independently. But, if they know they will be given

> the opportunity for the one-on-one instruction, then their effort will increase so they can prove what they know. (RC)

RE stated, “Gifted kids can be lazy and not disciplined. A teacher must know the kids, their strengths, weaknesses, and personalities. They need to have a proximity to them, along with really clearly stated outcomes.” RE continued by explaining that gifted students are typically those students that are set aside or partnered with someone who is struggling with a concept, but they are rarely academically challenged at their own level. RE also described how a very gifted student can sometimes be a student with attention deficit disorder (ADD), and therefore, giving that student an independent project would be a poor idea. Instead, when the teacher sits down and works with the gifted students, their true potential is revealed. RF described that with all his students, whether they are gifted or not, he raises the academic expectations. This allows the gifted students to receive the immediate benefit, as they are learning new content, or having to use their critical thinking and problem-solving skills. The gifted students are taught at their level, and then they help tutor the rest of the students who are not meeting his expectations.

RD described that the students in her homogeneous small groups work on an enrichment packet, where the questions focus the students on going deeper into the concepts, not giving more work. RI explained that one instructional strategy that works well with her gifted students is to first have them work independently on a concept, and once the work is completed her gifted students work in a small group with the teacher, giving them the opportunities to talk and discuss the mathematics concept with peers at their academic level.

RH explained that a teacher cannot just assume that because a student is gifted that they have mastered the basic mathematics concepts. The gifted students need to have individual instruction, where they must work on their communication skills, teaching them how to describe

the process used in solving each problem. This will allow the teacher to know that the gifted student has mastered the concept, but also can use his mathematics vocabulary to explain his way of thinking. RJ described that in her class an effective instructional strategy is to give an assignment, and then send the students off to go work on the assignment in pairs: “In pairs there is good conversation, there is more growth when working with peers than when working individually. It forces the students to learn how to talk to one another using math vocabulary.”

Respondent L explained that gifted students need the time to explore a concept once basic mastery has been proven. With her gifted students, RL will begin by working with the gifted group of students to make sure they have mastery of a mathematical concept. Then she will give them an extension activity where the students must use different resources (peers, Chromebooks, manipulatives) to solve the problem. After her initial small group interaction with this group of gifted students, they are set free to explore their assigned problem on their own for the rest of the week. At the end of the week, this group of gifted students will come back together, showing the teacher their content learned and discovered, and then be given the next steps. “This method allows me, as their teacher, to give specific attention to the gifted group of students, allows the gifted students the freedom and opportunity to explore, and then allows the gifted students to come back together to teach their findings to the rest of the group.

Theme 3: Social-emotional support for the gifted. Often, gifted students need extra social-emotional support, as they have a high-level of intelligence, but do not always know how to work well with others. RQ described the gifted students that she has worked with as needing social experiences.

> Most of the time, the gifted students are so strong academically that they lack the social interaction. These are the students who would be perfectly fine sitting in front of a

> computer, away from all peer-to-peer interaction, but we as educators have got to get these students ready for the real world. They must know how to work with others.

RQ was very passionate about this topic, as she continued to describe a gifted and talented program that she has created over the past 15 years in her school. Two days a week, gifted students come together for 30 minutes and are given team tasks to complete. The students must build, create, or problem solve to come up with a final product. Sometimes the students are very successful, but often they fail the first few attempts. RQ explained that it usually is not due to a lack of academic skills that has not been mastered, but because the gifted students must figure out how to work together. They must try each other's ideas out and be willing to fail.

> Because of this lack of social skills, as teachers of gifted students, we need to give them support. Give them opportunities to work together, to fail together, and to try it again. In the end, when the gifted students are successful, they totally forget about all the hardship it took to get there. They are just excited.

RH stated, "Gifted students have some anxiety. They always need support." RH described this anxiety as not knowing, not mastering communication skills, or not being able to put their thoughts down on paper; "We need to provide gifted students the skills to put in their toolbox to communicate with others." RH continued to explain that at her school site there is such a push from parents for their students to be labeled as gifted, which just increases the child's level of anxiety.

Interpersonal communication can be difficult for gifted students. RI explained the importance of providing opportunities for the gifted students to talk and discuss their mathematical way of thinking. "Often, these students are great at being able to solve problems on paper, but they struggle when they have to look at each other and discuss the math. We must

provide these social opportunities for these students." She continued explaining that often gifted students have a fixed mindset and get very upset at failure, or when they do not understand a concept for the first time. "We need to provide gifted students the words and the tools to open up their mindset to a growth mindset." RC also described a characteristic of gifted students as having a fixed mindset, often saying, "I already know this." She explained that as teachers, it is important to help the students get away from this mindset and motivate them to keep learning.

RJ explained that in her classroom, when given an assignment, they are first expected to complete it independently. Then they are placed in pairs to engage in conversation where they are describing the math process.

> This is definitely an area of weakness for these students. They do not know how to talk to each other. At first, instead of teaching each other the process behind how to solve a problem, the students are just concerned with getting the answer correct.

Based on her experience with these peer-to-peer chats, RJ daily implements them into her lessons because she believes that high levels of exposure to this type of interpersonal communication will not only make them stronger students, but it will provide them with a lifelong skill.

Research question 3: What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students? There were three themes based on this research question: First, the implementation of a teacher on special assignment (TOSA) focusing on gifted education or gifted and talented educational coach; second, opportunities for teachers to go and observe colleagues to improve differentiated instructional practices; and lastly, and the need for specialized teacher trainings.

Theme 1: Implementation of a teacher on special assignment (TOSA) or gifted and talented educational coach. RE explained that there is extensive support for the special education students, but not for the gifted students. Having a gifted and talented education (GATE) TOSA would allow teachers the opportunity to use a coach to improve the instructional practices for the gifted students. This could include collegial conversations with that coach, and brainstorming ways to better meet the needs of the gifted. This could also include teachers being given the opportunity to observe the coach teach in their classroom. RE felt that there are special education teachers on each campus to support the students with learning disabilities, but there are no specialized instructors to help classroom teachers find effective instructional strategies, build curriculum and assessments, and facilitate professional conversations with teachers about gifted education. "Having the support of a GATE teacher on special assignment would provide teachers the support they need to offer pedagogical suggestions for the gifted students."

RK discussed the creation of a position for a GATE coach; a mentor who other teachers could schedule to go through the coaching/observation process with to find instructional strategies to better meet the needs of the gifted students. "This coach could model lessons for the participating teacher, and then together, they could discuss effective instructional strategies that were implemented during the lesson." RP stated, "A day working with an expert and being shown real, tangible ways to differentiate curriculum for gifted students…Kind of like a 'make and take' workshop" would be the ideal professional development for the gifted students. RM explained that typically her differentiated instructional strategies occur because she has 30 years of classroom experience.

> I have great plans to differentiate my instruction using a variety of projects; however, there are many times when I need someone else to lend a hand during the

implementation, or someone else to bounce ideas off. I think having a GATE Coach would be a great use of funds.

RA explained that about 13 years ago, the district paid a gifted and talented consultant to train and certify any teachers who were interested in becoming GATE certified. Through this extensive training teachers were given the basic classification of a gifted student (definition of a gifted student, character traits to describe a gifted student), how to differentiate instruction in the classroom, and given the opportunity to observe other teachers. This training lasted 6 weeks, and each week teachers could try strategies in their classrooms and then come back and share the results. There was time given at the beginning of each training to discuss—with the GATE trainers what worked and what did not work, and the GATE trainer could strategize a plan for the upcoming week.

This was the best training because it provided general education classroom teachers an educational coach focused on gifted education, one who could guide teachers to meet the needs of the gifted students. The implementation of a GATE Coach should occur in our school district.

RQ described a GATE workshop that she attended 15 years ago where she spent a week immersed in a gifted education school where she could observe differentiated instructional strategies in the mornings, and then had the opportunity to meet with the gifted education coach in the afternoon. “The time spent with the GATE coach was so important because we could talk to him about strategies we wanted to go back and try in our classrooms. He would help us expand on those strategies and have a plan for us when we returned to our classrooms.” She described the need for a GATE coach in the school district to help the teachers focus on differentiated instructional strategies for the gifted students.

Theme 2: Observations of colleagues. There need to be opportunities for teachers to observe colleagues who have strengths in differentiating for the gifted students. "As professionals, teachers learn so much when they are given the opportunity to observe other teachers" (RE). RE explained that teachers need more than just collaboration time. They need the time to go and observe other teachers, to see what the practices look like when they are implemented in a classroom with 30 students. RQ supported the need to get into each other's classrooms and observe the different instructional strategies that teachers are using to differentiate instruction. "So often we hear of amazing practices being done by different teachers. I want to see them in play with real students so that I can effectively implement them in my classroom" (RQ).

Small group instruction was an effective differentiation instructional strategy that was discussed throughout the interviews. Teachers expressed the need to be able to collaborate with other teachers about what these small groups looked like and sounded like. RG explained that teachers who are beginning to implement small groups in their classrooms need to go and observe teachers who have a greater amount of experience in this area. "I run small groups in my classroom daily, so I am very comfortable working with a group of students while the rest of the students are working. However, this is not the case for all teachers." She suggested that with each teacher observation, there is time set aside to talk to the teacher who was being observed in a post-observation format, allowing the observer to ask any questions he/she may have had.

RK expressed her desire to increase teacher observations of colleagues. "We need to learn from each other. We are all professionals, and we should use our expertise to our advantage." She discussed that when teachers can model differentiated instructional strategies for their colleagues, an immense amount of on-the-spot learning takes place, and the teacher who is

observing can begin to formulate an implementation plan in his/her mind. RQ also explained that school administrators need to be on-board with teachers observing other teachers. “Although being out of the classroom is tough, we can learn so much. When we can watch and learn effective instructional strategies, then our teaching becomes better.”

Theme 3: Teacher training. Teachers had many different ideas on the types of training needed to better meet the needs of the students. Teacher training needs to include, but is not limited to: technology programs that offer individualized instruction to maximize the impact of time, strategies to effectively implement small-group instruction, the basic characteristics of the gifted students, how to use project-based learning activities in the classroom, and strategies of different instructional techniques.

> Training must be meaningful. Our school district pays for so much training that it ends up just causing teachers to feel overwhelmed. Teachers need to be asked what types of training they desire, what types of new methods they would like to implement in their classrooms, and then solicit our own professionals to teach the trainings.

RA expressed concern that all teachers in the school district did not have a common language when talking about gifted students. Her suggestion was to have an instructor of Gifted and Talented Education come to give a certification course to all the teachers in the school district who have never been certified as a gifted instructor. This would give teachers the opportunity to establish a common language in order to meet the needs of the gifted students. RI explained that training on the basic needs of the gifted students would be quite helpful; “So often gifted students think differently that all the rest of my students, and I need to know how to best help them.”

RB explained that there is district-adopted curriculum, and that it would be helpful to get teachers from our district to lead a professional development about the tools that are currently available to help the gifted students. RD described that there are many different project-based learning activities and games for the students to play, but teachers do not know how to implement them into their classrooms; therefore, training would be helpful about how to use these types of hands-on activities in a classroom setting.

Many of the teacher interviews talked about a need for implementing small groups in the classroom. RG stated, “Small groups can be so effective, but you have to know how to run them in your classroom.” RG explained that teaching small group instruction (and allowing the participants to watch small groups run in a classroom setting) must be done because not all teachers have that knowledge; “Small groups are fairly new in education.” RH included that with professional development on small group instruction in the classroom, teachers need to understand how to create activities for these groups that draw conclusions, synthesize, and analyze data. RH described her small groups as being activity-based, where students are not completing a packet of work. Instead, they participate in meaningful activities that will challenge their brains, giving them problem solving and critical thinking activities.

RJ recommended teacher training on new instructional methods for meeting the needs of the gifted students. She recently attended a professional development on Number Talks which she plans to implement into her classroom for all her students. Specifically, she would like to see the improvement in mathematics that these number talks have on the gifted students. The activities allow students to practice their communication skills while using mathematics vocabulary while talking about mathematics concepts.

RE suggested a teacher in-service on Marcy Cook problem-solving techniques and mathematics manipulatives.

> We need to find activities where the gifted students must use their brains to solve problems and show their thinking using math manipulatives. So often the gifted students are unwilling to attack the word problems because they do not want to explain their thinking.

She explained that if the students are provided the tools and resources, then they will have to think critically to solve problems.

RK suggested teacher training involving both Guided Language Acquisition Design (GLAD) strategies, and Kate Kinsella (structured academic language). With the implementation of both strategies, the gifted students would be given the opportunity to work on team tasks (helping to improve social skills), as well as strengthen their vocabulary (helping to improve their academic language). RE supported GLAD teacher training, as it could target instruction for students at all levels. "Offering GLAD training for teachers would broaden a teacher's repertoire or instructional strategies for the gifted learners, and the new strategies could create different methods of delivering content to all learners" (RO).

Chapter 4 Summary

Throughout this qualitative phenomenological study, each one of the participants were grateful that differentiated instruction for the gifted students was a topic of focus. Since funding was cut to gifted education four years ago, gifted education is not such a focus in the district anymore. "The focus is not on the gifted students; teachers at my site do not even discuss it" (RE). RE explained that students at her school site are sad that there is no longer an afterschool enrichment program; however, the teachers have filled that enrichment program with another

Science-based afterschool program in which any students can participate. RM explained that there is still a need to make these gifted students feel special, and she discussed a program that she is going to implement for a trimester. RQ expressed her frustration and sadness with ending the gifted program because these students deserve to have the focus of their teachers just as any other student in the class does.

Since testing and qualifying students as GATE using the OLSAT test stopped 4 years ago, parents cannot put an emphasis on having their child labeled as gifted. RP stated, "The GATE program in our district was pretty ineffective and was really just a way for parents to brag about how smart their kids are." RH explained that there was so much pressure for students to pass the test that students were anxious and stressed about having to perform at high levels. RQ explained that when students from some elementary schools came to take the OLSAT test, they were nervous about the test, stating, "I have to pass this test to get into a good college." RQ expressed her concern with the amount of pressure that was placed on some students to qualify as GATE.

Meeting the needs of the gifted students is important, but there are so many other factors that get in the way in the classroom. Teachers explained that because gifted students typically do not have any Individual Education Plans (IEPs) (unless they are twice exceptional), the students who are a part of the special education department often take precedence. RD stated, "I give less focus on gifted students when I know they need it. However, currently the focus in my classroom is on getting students proficient for state testing, IEPs, and behaviors." RA explained, "I often unintentionally ignore the GATE students because I am dealing with other students' behaviors. I know I should be working with the gifted students, but due to unfortunate circumstances some days it just does not happen." RB explained that the composition of his classroom is heavily

English Language Learners and Special Education students, with a lower number of gifted students. As a result, RB stated,

> My focus is on getting these students proficient in Language Arts and Mathematics, and quite honestly, the gifted students fly under my radar. Also, there are not as many gifted students in my classroom than there used to, which adds to my lower focus.

RI explained that so often her focus is on the below-grade level or on-grade level students because these are the students who struggle with vocabulary, and she does not want to see them slip below proficient.

While there is not a strong emphasis on gifted education in the school district since testing and qualifying students as GATE ended four years ago, there are also some effective differentiation instructional strategies also taking place in the classrooms. RP discussed the implementation of her Genius Hour project with her students, which gave her students the opportunity to shine. RP stated, "A really effective differentiation strategy is to give students a choice about what they want to learn, how they will go about doing it, and how they will demonstrate mastery." When the students choose a topic to focus on, they research it, come up with a plan to improve it, present the plan to the classroom, and then implement that plan. "The students really demonstrated high-level skills in a real-world application" (RP). RM described the project-based learning activities that she has her students complete.

> One example of effectively differentiating instruction for the gifted students is our roller coaster project. The students have to work together to research and create a roller coaster that a small car can travel through, and then they have to present their roller coaster project to the classroom.

RQ described team-building activities that help the gifted students work together towards a common goal: “The students have to problem-solve as well as work together, which is not always the simplest task for these gifted students.”

For most of the participants, classroom instruction has not significantly changed for gifted students over the past four years since students are no longer tested to be qualified as Gifted and Talented. RA explained that as her number of years of teaching experience has increased, her gifted instruction has improved. “I have more self-confidence that I am meeting the needs of the gifted students when I give them options about the instruction they are receiving and the content they are learning” (RA). RI explained that each year she has done a little bit more for the gifted students; “My goal is to keep them engaged, and in order to do that I need to step up my game.” RC explained that since students are no longer tested and qualified as Gifted and Talented (GATE), she can focus more on the individual student’s needs. “Before, when students were tested, some of the qualified students did not exhibit traits of gifted students. There is a real difference between high-ability and gifted students, and sometimes I don’t think that test could differentiate between the two!” RH agreed with RC, explaining that she uses her own assessment materials to assess the students and level them into academic groups. “I cannot depend on one test that was given on a Saturday morning to tell me if a student is gifted or not. I need to get to know the student, watch him work, analyze his work, give him an assessment, and then decide his level of giftedness (RH). RN agreed that there were students who were labeled as gifted, who participated in GATE activities, but who did not truly exhibit gifted qualities. She explained that in her classroom, because students are not qualified and labeled anymore as gifted, she can find a set of five or six gifted students in her classroom and create an activity for them to complete. These students are all at the same academic and social level and can work to complete

the task. RE explained that at her school site the focus in the classroom is not on the gifted students. Instead, there is an afterschool opportunity to participate in a science activity for the students.

RG feels that her gifted instruction has changed over the years since students are no longer tested and labeled as GATE. RG explained that now gifted instruction is all the teacher's responsibility, as there are no pull-out programs for GATE students. "Teachers have to explain how they are differentiating for the gifted students to each of the parents." RJ also supported this position, explaining how gifted education and differentiating instruction solely became the teacher's responsibility since district testing stopped. "The teacher is now responsible for picking up the pieces and differentiating for the students. Although I have always had some level of differentiation in the classroom, now I must answer to the parents about my instructional practices."

The final part of this qualitative phenomenological study is Chapter 5. The first part of Chapter 5 discusses the results. They are summarized and analyzed, and then connected back to the literature. Limitations that occurred during the study are described, and there is a discussion about how the results of this study could impact practice and policy. It includes ideas for future research, as well as the final conclusions of the study.

Chapter 5: Discussion and Conclusion

Introduction

The purpose of this qualitative phenomenological study was to explore the classroom experiences of teachers with regards to utilizing differentiated instruction with high-ability learners. Teachers who had taught in the school district for longer than 4 years were interviewed, so that they could explain what gifted education looked like when students were tested and qualified as gifted, and then what their instructional practices look like since testing to qualify students as gifted stopped. Several years ago, the school district stopped testing and identifying students as gifted due to a lack of funding for the gifted and talented program. In addition, during this study, teachers identified strategies of differentiated instruction for the gifted students (both effective and ineffective instructional strategies), and how these strategies were implemented in the classroom for the subject of mathematics in Grades 3–5. Participants also discussed professional development opportunities and resources that would be helpful to improve their differentiated instructional practices for gifted students.

In classrooms all around the world, students have different needs, strengths, weaknesses, motivations, and learning styles (Chien, 2015). Instead of having the teacher use the instructional strategy of whole-class instruction for the entire school day, varying classroom instruction through differentiated instruction will help meet the needs of the gifted students (Brevik et al., 2018). Gardner (1999) discussed how each person has multiple intelligences, allowing people to learn differently. There are students who are auditory learners who learn best by hearing, and there are those students who are kinesthetic learners who must have movement to learn best. Each person (both students and adults) is unique, and when teachers understand each student's

unique learning style, there is potential for more success when learning and practicing something new (Gardner, 1983).

The problem that was addressed in this study was that in the typical elementary school classroom these gifted learners are not given the opportunity to expand their knowledge and skills. Tomlinson and Murphy (2015) suggested differentiating instruction through the process (how the students learn the material), the content (the standards and curriculum that the students are expected to learn), and the product (how the students are assessed to show their mastery of knowledge). In order to provide differentiation in the classroom, there are several needs of the teachers. Teachers need to be given the time to get to know their students. This can be done through in-class observations, assessments, class discussion, and student surveys (Cha & Ahn, 2014). In addition, teachers need professional development opportunities to grow their differentiated learning opportunities for gifted students. Teachers also need the time for collaboration with colleagues to plan, create, and discuss the needs of gifted students (Chu & Meyers, 2015).

In this chapter, the meaning of the results will be analyzed. The chapter will begin with a summary and discussion of the results that were given in Chapter 4. These results will then be discussed in relation to the literature, followed by the description of the limitations of this phenomenological study. The implications of the results for practice, policy, and theory will be given, and the results will then be connected back to the theoretical framework from Chapter 2. Recommendations for further research will be stated, followed by a conclusion. After Chapter 5, there will be a reference section, and an appendix with any extra resources used in this study.

Summary of the Results

Teachers who participated in this study began by defining a gifted student and what it means to differentiate instruction for the gifted students. Then teachers described effective instructional strategies followed by ineffective instructional strategies. Teachers continued by discussing their needs to make differentiation happen more often for the gifted students. They discussed inhibiting factors, which prevented them from differentiating. Finally, teachers listed any professional development and resources they felt would be beneficial for improving their instructional strategies for differentiating instruction for the gifted learners. Concluding each interview, participants could discuss anything else they felt could contribute to the discussion involving gifted students.

A gifted student can be described as a student who thinks outside-the-box, one who typically masters grade level content ahead of the others in their class, and then needs more stimulation to keep the level of engagement and motivation needed to learn. RC explained that there is a difference between gifted students and high-achieving students: “Gifted students are not just hard-working students, but rather, gifted students don’t typically think like the other students.” RE explained that gifted students are brilliant students academically, but they need clear expectations to help keep them on track.

All teachers explained that the goal of differentiation is to meet all their students at their level, offering them different choices of activities to complete or variations of assessments to show what they know. RA stated, “Differentiated instruction is teaching in such a way to hit learning for all students, challenging all students.” Differentiation could mean re-teaching skills to struggling learners, practicing skills with students on-grade level, or challenging gifted learners. All teachers interviewed differentiate their instruction in a variety of grade levels (some

more than others), but 11 out of 17 teachers focus their instructional strategies for differentiation for the gifted learners in the subject area of mathematics. RG explained that instruction for gifted learners must go deeper, instead of just skimming over the content; “It’s like going a mile deep instead of going a mile wide.” This is the analogy that RG used when explaining the importance of students knowing the “why” behind the mathematics concepts and not just the “how.”

Research Question 1: How are elementary school teachers implementing differentiated instruction practices during mathematics instruction with gifted students in grades 3–5? Teachers discussed three instructional strategies when describing their differentiated practices in the classroom for the gifted students: The use of small group instruction to meet the needs of the gifted students, technology used to individualize instruction and offer academic challenges, and implementing meaningful mathematics experiences, math coaching, project-based and reality-based learning activities.

Small group instruction. One common effective instructional strategy for the gifted learners was the use of small group instruction. RC described her small groups as being activities-based, where students are not completing worksheets. Instead, they are working through deep-thinking activities where they are challenged to grow out of their fixed mindset. One activity that RE uses in her small groups is called Pentaminos, where the students must solve puzzles to move forward in the game. While some teachers used homogeneous groupings for their small groups, some teachers preferred a heterogeneous grouping of students. RH explained that when students are of mixed ability, they can share their thinking and teach other students in the group from a different perspective.

Implementation of technology in the classroom. With the use of technology in the classroom, students can use a variety of programs to individualize their instruction. RQ shared

how programs such as IXL and Khan Academy offer a diagnostic assessment, showing skills that students have mastered, skills they need to practice, and skills they have not yet learned. From there, technology programs can recommend lessons for students to complete in order to master skills. RB explained that when teachers know the full online capabilities of the adopted curriculum, they can use that individualized instruction to challenge the gifted students so they can learn something new.

Meaningful mathematics experiences. Teachers explained that gifted students must participate in meaningful mathematics experiences to challenge their brains and motivate them to keep learning. Some of these meaningful mathematics experiences could include, but are not limited to, mathematics games, peer coaching, and project-based and reality-based learning activities. RQ expressed the necessity for the students to be exposed to reality-based mathematics practices;

> All students are going to have to go to the grocery store or order dinner at a restaurant. They must know how to order off a menu, calculate their total, and then calculate their change. There are too many people who do not know how survive without a cash register or a calculator.

RD stated, "Students need to play math games where they can practice the math concept they are learning and connect with their peers with interpersonal interactions."

Several of the teachers interviewed discussed peer-to-peer math coaching that takes place in their classrooms. While some teachers paired their gifted learners with their struggling learners for the purpose of reteaching or tutoring the struggling learners (RG), some teachers grouped the students heterogeneously so that the struggling learners could explain their way of

thinking to the rest of the learners. “Sometimes, the lower-end learners can add a different perspective that the gifted students would not have seen otherwise” (RH).

Research Question 2: What are the perceptions of elementary school teachers regarding their classroom experiences with instructing gifted students in grades 3–5, as well as the types of support needed to meet their needs? Participants had a variety of classroom experiences with gifted education. While some had a very positive perspective on gifted education in the school district, other participants thought that testing and qualifying students as gifted was a disservice because, “many times the students who were qualified never showed any characteristics of being gifted” (RP), and were very pleased when the qualification of students was discontinued. In addition, teachers voiced frustration that they were now responsible for meeting the needs of the gifted students in the classroom, because there were no pull-out enrichment program for the gifted students, or there was nobody else to answer the parents’ concerns. It all fell on the shoulders of the teacher. Participants talked about three common types of support that was needed in order for teachers to more effectively differentiate instruction for the gifted learners: A need for additional time to collaborate with colleagues on strategies to effectively meet the needs of the gifted students, finding ways to individualize instruction for the gifted students, and offering extra socio-emotional support for the gifted learners.

Additional teacher collaboration time. Teachers felt that they needed professional collaboration time, where teachers could come together and discuss gifted education. Those discussions would include: how they are differentiating (or not differentiating), effective instructional strategies for gifted learners, lesson planning, activities (project-based or reality-based learning experiences), and the creation of assessments using a variety of media and

choices for the students. RP suggested the use of having unstructured teacher collaboration time, where teachers could discuss "everything GATE," where they were able to plan and create and not feel bound by other collaboration topics. RA suggested using some of the Collaboration Wednesdays to have grade levels work together on the topic of gifted education. RH showed a desire to be able to have the time to work with grade-level colleagues to create real-world, hands-on materials to enhance the gifted students' learning experiences.

Personalized gifted instruction. Although each of the teachers could discuss the importance of giving the gifted students personalized attention during class, they could also admit that it does not always get done.

> It is easy to give the gifted students an assignment, set them in the corner, and tell them to get to work; however, this is ineffective. These students deserve the right to have the attention of the teacher too. After all, it is the teacher who will inspire and motivate the gifted students to keep learning. (RQ)

RF carried a unique approach to gifted education. He explained that he simply raises the academic expectations for all his students. This immediately allows the gifted students to be fully engaged and present in the lessons being taught. He will then offer additional instruction to those students who do not fully understand the concepts being taught.

Social-emotional support for gifted students. "Gifted students often lack the grit that it takes when they get frustrated, or when they have to work with someone else who contradicts their thinking" (RQ). RQ explained that often gifted students are very bright academically, but they have great difficulty working with others; "We need to give these gifted students the tools to work with others, as well as problem solve in social situations." RC described that in her experience working with gifted students, they often break down and give up because they just do

not understand why they must practice this concept again. “Gifted students often have a very fixed mindset when they run into challenges. We need to help them to change that mindset to one of a growth mindset” (RC).

Research Question 3: What are the perceptions of elementary school teachers regarding the types of professional development support they believe are the most effective for delivering differentiated instruction to gifted students? Participants had many suggestions of types of professional development that they felt they needed to better meet the needs of the gifted students. These professional development suggestions fit into three categories: The implementation of a gifted education TOSA (who could serve as a coach for the school district), opportunities for teachers to go observe the instructional practices of their colleagues, and many different types of teacher training.

Gifted education teacher on special assignment (TOSA). Teachers expressed their frustration that often in education the focus is on the struggling learners, the learners who have Individual Education Plans or 504s. Because of this, there is a lack of time to plan and implement effective instructional practices for the gifted learners.

> Having a teacher on special assignment would allow a coach to go into the classroom, observe the teacher, work with the students, and offer suggestions to the teacher on how to tweak the lesson to better meet the needs of the gifted students. (RE)

Having this instructional coach would allow the teachers to gain more effective instructional practices to differentiate instruction for the gifted students (RK).

Observations of colleagues. RE explained that teachers need to not only have extended collaboration time to focus on gifted education, but they also need to have time to go into the classroom and observe their colleagues. “It may be watching how an instructional strategy is

introduced, or how a teacher lays out their small groups. We can all learn from observing one another" (RE).

> Sometimes we just do not fully understand how to implement an instructional practice in the classroom, but when we see it, we get the 'aha' moment that our students get when a concept being taught clicks in their brain. We need to be given the opportunity to see other teachers. (RQ)

Teacher training. Participants brought up many kinds of teacher training. Some trainings included: small-group instructional strategies (how to implement small groups in a classroom, how to use assessment to drive instruction in each small group, and what assessments are more effective to use for creating small groups), getting the most out of district-adopted curriculum, and receiving training on new instructional methods for meeting the needs of the gifted students (Number Talks, GLAD, Kate Kinsella).

Small-group instruction was an effective instructional strategy that could be used to differentiate instruction for the gifted learners. However, not all teachers know and understand how to implement small groups in their classrooms. RG described that much of her school day is spent working with students in small groups.

> I can challenge my gifted students to go deeper into the curriculum when I work with them in small groups. The problem that I see at my school site is that not all teachers understand how to implement these small groups in the classroom.

RQ explained that she would love to effectively use small groups in the classroom, but she could benefit from some instruction on how to implement these groups in her classroom setting with 35 fifth graders.

Several participants discussed the fact that the district has adopted mathematics curriculum that has an online component, but no one really knows the full capabilities of the online component. “It would be very helpful if teachers were trained by their colleagues on the Go Math website. There are extension activities and games for the gifted students, but teachers do not know how to access any of this” (RB). RG complained that she was spending all her time trying to find new online resources to individualize instruction for her gifted students, but if she knew what the adopted curriculum could offer online, that would be helpful.

Lastly, teachers were interested in receiving new training to help them improve their instructional practices for differentiating instruction for the gifted students. Two of the participants were frustrated that they were spending their own money on attending workshops; they felt the school district should be asking teachers what they want to learn more about. In addition, RK explained that having teachers attend professional development that got students up and moving around the classroom would increase their attention span and their motivation to learn.

Discussion of the Results

Throughout each interview, all participants were completely willing to be open and honest about their thoughts on gifted education. They answered all questions with candor, even when their thoughts about gifted education did not totally line up with that of mine or the district’s. While some teachers opposed the district’s decision to end GATE testing 4 years ago, many of the participants did not have a problem with this decision, explaining that they felt the GATE program was ineffective, and were grateful that testing and qualifying students ended. The biggest problem that teachers have had with concluding the GATE program was that they now are responsible for creating opportunities for differentiation for their students.

> The parents at my school site are very demanding, and they were not happy their child could not be labeled as GATE. They often question how their child's needs are being met in the classroom, claiming their child is bored with the normal curriculum. (RH)

There was a strong desire to have a coach to focus on supporting the classroom teachers with gifted education.

> We really could use some support to help us better meet the needs of the gifted students. There are so many other reasons why we do not focus on differentiation for the gifted learners, and if we had a Gifted Coach, then we could use that person as a resource to help us. (RE)

RQ also explained that there is no time dedicated during collaboration to discussing gifted education or creating activities, projects, or assessments for these students.

Teaching experience from those interviewed ranged from six years to 30 years, and all teachers felt that it was important to meet the needs of the students. Although I have a variety of academic levels present in my classroom, I have a passion for challenging the gifted students, as they are the ones who are often given free time because their work is already finished, or they have to help someone else in the classroom who did not understand the concept. I believe these strategies are acceptable to use in the classroom on an occasional basis; however, they cannot be used all the time.

The purpose of this study was to explore the classroom experiences of teachers with regards to utilizing differentiating instruction with high-ability learners. It was clear from this study that teachers identify that there are different types of students in their classrooms, and each student has a different academic need. While some students are struggling to learn the curriculum, some students are right on target, and other students need to be challenged

academically. Many teachers have different ways of getting to know the learning needs of the students. While some teachers sit down and have one-on-one meetings with each student each trimester, some teachers give their students online learning style questionnaires to find out their learning style strengths and weaknesses.

> My favorite part of my day is when I can sit down one-on-one with the students and chat about the learning goals and how the student is going to achieve those goals. It really helps the student take charge of their learning pathway. (RQ)

RC described that she enjoyed getting to know the students throughout the beginning of the year because then she could see what their academic and social strengths and weaknesses were, and then create a differentiated learning plan for each individual student. RC explained that she likes being able to analyze her whole class and differentiate for students she feels need an extra challenge instead of just differentiating for those students who tested and qualified as GATE.

Throughout the interviews, each participant described effective and ineffective differentiated instructional strategies. There was an overwhelming consensus that an ineffective instructional strategy is to teach the students (of all academic levels) whole-class. “Students cannot be given the same things to work on; the gifted students get bored, and then their behaviors come out and distract everyone else, throwing off the entire learning environment” (RE). RQ described that in her homogeneous flexible grouping for mathematics, all activities are timed, and the expectations are clearly stated at the beginning of the lesson.

> Gifted students thrive on structure, and when the expectations are clearly stated, they will rise to the occasion, but when there are no time constraints, when the expectations are not spelled out at the beginning of class, then the gifted students are more relaxed and not as motivated to work. (RQ)

Another ineffective instructional strategy that teachers discussed was the use of giving the students a packet to work on independently. RE explained that in her experience, sometimes a highly gifted student is also a student with Attention Deficit Disorder (ADD) and cannot sit still to work on an independent project. RF also described an independent study project that he created with a student, but it required the student to do work on his own in class and some extra work at home. The teacher agreed to set aside time to check in with this student and monitor his progress, but ultimately it came down to the student. The student had to decide to stay engaged with the independent study contract. RF stated, "It started out so well, but then the student lost interest always having to work on his own. Within a short time period, the student was working back with the rest of the class." RC explained that in her experience, gifted students are not necessarily willing to work hard outside of a small group. "They know the material being covered, and unless I am meeting with them to go over their work, they tend to slack off quite a bit."

Teachers also expressed their frustration with being pulled in so many different directions in order to meet the needs of the students. Often the students who are mastering the concepts being taught, are those who get left out unintentionally. "I know I need to differentiate for my gifted learners, but it is the high-fliers who have my attention. I can have my gifted students work on something quietly at their desk while I deal with a behavior from another student" (RD). RB expressed his concern with the number of tier two and tier three behaviors in the classroom. "I plan some great lessons, but then the students walk in the classroom and all of my plans get thrown out the window. We need some behavior specialists to come in and help with these students" (RB).

Throughout each interview, teachers described their experiences with gifted education, both prior to four years ago when students were tested and qualified as GATE by the OLSAT test, and in the more recent years since students are no longer tested and qualified. Not one teacher said that gifted education is not important and ineffective; instead, it was quite the opposite. Teachers were pleased that gifted education was the topic of focus. They agreed that there is a great need for differentiating instruction in the classroom to meet the needs of the gifted students, but they also expressed their need for support through resources, technology, collaboration, and professional development to build meaningful learning experiences for the students.

Discussion of the Results in Relation to the Literature

Based the results of this phenomenological study, teachers recognized that differentiated instruction needs to take place in the classroom so that gifted learners are given the opportunity to be challenged academically and are more motivated to keep learning. Tomlinson and Murphy (2015) described differentiation of instruction as occurring multiple ways in the classroom: the process (how the students are learning the material), the product and demonstration of knowledge (the final assessment), the content (what the material is that the students are learning), and the environment in which gifted students learn. Missett et al. (2014) suggested that by formative assessment, the teacher can adjust the students' pace based on their capabilities or use ability-based grouping as a differentiation strategy. While many of the teachers differentiated the learning environment by grouping students homogeneously or heterogeneously, some teachers differentiated instruction by content, offering a variety of assignments that could be completed to show mastery of the material. Watts-Taffe et al. (2013) explained that differentiation as an

evidence-based practice must be balanced in the classroom. Teachers need to find a balance between whole-class instruction and small group instruction.

Teachers expressed their concern for effectively differentiating their instructional practices for the gifted students based on several factors. Teachers felt they needed more time to collaborate with each other to plan for the gifted learners.

> We need time to collaborate with our colleagues so that we can create meaningful learning experiences for our gifted students. We need the time to create projects, task cards, games, and assessments so that our gifted students stay motivated and challenged academically. (RM)

Chien (2015) discussed the need for teachers to have appropriate collaboration and planning time to implement successful differentiation strategies. The role of the teacher changes from "dispenser of knowledge to facilitator of learning" (Chien, 2015, p. 271). RK expressed her desire to have an increase in teacher planning time so that teachers could plan together to decide on effective instructional strategies, groupings of students, and who was going to teach what group (between teacher and paraeducator).

Teachers felt they did not have enough skills to effectively implement certain differentiated instructional strategies in the classroom. Machu (2015) explained that teachers who have a greater amount of experience differentiate better in terms of instructional strategies and content. Cha and Ahn (2014) explained that a challenge of differentiating instruction is that few teachers can accommodate for the diversity of learners in the classroom because teachers lack the training. Kahveci and Akgul (2014) described that one improvement that needed to be made in gifted education was the preservice and in-service professional development with a focus on gifted education. People going to college to become teachers are not taught effective,

real-time strategies of differentiation, acceleration, and enrichment regarding gifted education (Kahveci & Akgul, 2014). Throughout this phenomenological study, many teachers showed a desire and knowledge to teach gifted students in small groups in the classroom; however, several of these teachers did not know how to effectively implement small group instruction in the classroom. “Small groups can be so effective, but you have to know how to run them in your classroom” (RG).

Brevik et al. (2018) explained that not only do teachers need to have the appropriate training, they also need to be given practical application strategies. RA explained that all teachers need to be trained on the basics of gifted education so that everyone has a common understanding of the gifted child and their needs before any practical classroom applications can be taught.

> The best training that I attended was when I got to observe teachers implementing differentiated instructional strategies in the classroom. I sat in a professional development in the morning, and then I got to observe these same strategies being implemented in the afternoon. It was phenomenal. (RQ)

Young and Balli (2014) explained that teachers who had more extensive GATE training were more equipped to teach gifted students. In this phenomenological study, teachers had the knowledge to teach gifted students in small groups, but they did not possess the practical application of small groups or how to implement them in the classroom. RP suggested an effective professional development would be to allow teachers to get together to collaborate about practical applications for differentiated instruction in the classroom, and then create make-and-take items for immediate classroom implementation.

Conley (2013) discussed the importance of teaching the students the skills they need to be successful in high school, college, careers, and beyond. These skills include working with others, organization, time management, goal setting, and self-awareness. Chu and Meyers (2015) explained that with the adoption of the Common Core State Standards (CCSS), educators were told that the needs of all students would be met. However, these standards have had little impact on the gifted students. Haberlin (2016) explained that with the adoption of the CCSS, instead of challenging the gifted learners, the focus is on the mastery of English Language Arts and Mathematics. Gifted students have intellectual and socially unique needs that "warrant challenging and supportive experiences in the classroom" (Chu & Meyers, 2015, p. 43). As the teachers who were interviewed described effective instructional strategies for the gifted learners, one 21st century skill that was consistently repeated was communicating and collaborating with peers. Using homogeneous or heterogeneous small groupings, gifted students are expected to collaborate with each other to explain their way of thinking as they solved the problem or completed the task. When proper differentiated instructional strategies are implemented, students show intellectual growth, academic challenge, and a realization of potential, preparing them for their futures, in high school, college, careers, and beyond (Haberlin, 2016).

Limitations

Once IRB was approved to conduct this study, there were some unexpected limitations that occurred. The first limitation dealt with timing. With 2 weeks left in the school year, trying to recruit teachers to participate was a challenge. After the first email to teachers requesting their participation, only three teachers volunteered. Knowing that would not be an acceptable number of teachers to conduct this qualitative phenomenological study, a second round of emails was sent out to teachers. This time, each teacher received an individual email, further explaining the

study and asking for their participation. After following up with the responses, there were a total of 15 additional teachers who agreed to participate. In the end, there were a total of 17 participants (as opposed to the 12–15 that had been estimated), through three grade levels (five third-grade teachers, three fourth-grade teachers, three four/five combination teachers, and six fifth-grade teachers, plus the English Language specialist for the district). Instead of eliminating people from the study if they were duplicates, I felt that their opinions were valid for the study, so I accepted all willing participants.

Another limitation that occurred during this study was the fact that some participants could not meet face-to-face for an individual interview. Because this interview study occurred over the summer, some teachers were unavailable to meet in-person; fortunately, these teachers could meet over the phone. All participants, whether face-to-face or over the phone, were given the same greeting: they were thanked for their participation, and then the purpose of the study was stated followed by the interview questions. After each question had been asked, each participant was given the opportunity to add any additional information with regards to the study of focus. Finally, each participant was thanked for their participation and given the next steps in the study. Some phone interviews were longer that those in-person interviews, even with all the questions asked and answered.

Implication of the Results for Practice, Policy, and Theory

According to Vygotsky's (1978) social constructivist theory, learning is an active process, and students learn best when they are given opportunities to participate in a meaning-making process. This idea of a meaning-making process that Vygotsky (1978) described in the theoretical framework connected to the results of this phenomenological study. All the teachers unanimously stated that packets of work were completely ineffective; instead, gifted students

must participate in meaningful mathematical experiences. RQ discussed mathematical games that she teaches her students how to play, and where the students will get to use their mathematics skills to try to beat their opponent.

> One game is called "Contig," and the students have to roll three die and perform any operation to get a number on the game board. When the rules of the game are followed, the students end up helping each other during each turn. All the students are practicing math, and they are loving it! It is even a game that can be taken home to play with their family members. (RQ)

This is an example of a meaning-making experience. The students are going to learn and understand the mathematics concepts much better than if they were to just complete a worksheet of math facts.

Participants in the phenomenological study described that the use of whole-class instruction was not effective when differentiating instruction for the gifted students. Keith (2015) explained that a classroom where the teacher acts more as a facilitator allows for the creation of a student-centered environment. "Students get bored when everyone is doing the exact same thing" (RE), and this boredom does not promote a meaning-making experience. RF described one strategy for differentiating instruction is to raise the academic expectations for all students, and then differentiate instruction down to the struggling students, offering additional tutoring or reteach opportunities for those who are not meeting the expectations.

> I want all of my students to know that they are capable academically, and so when I raise the standards for everyone in the classroom then the students also raise their expectations. I teach my students to self-reflect on their learning and ask questions when they need extra support. (RF)

This strategy supports Vygotsky's (1978) theory of social constructivism, and would teach the students to self-reflect, assessing how their understanding of a concept is increasing.

Project-based learning units are another way of creating constructivism in the classroom. Martinez and Stager (2013) explained that in order to have a classroom based on the theory of constructivism, students must problem solve, use higher-order thinking skills, and work collaboratively with others on a consistent basis. When students participate in a meaningful mathematics experience, learning is constructed. It is through these experiences that students work with others and use their problem-solving skills, higher-order thinking skills, and collaborative work to conduct experiments and focus on real-world skills instead of just reaching for a mastery of skills (Martinez & Stager, 2015). Throughout this study, one differentiated instructional strategy teachers described was having the students complete real-world, and menu math and career math assignments where the students had to take their content knowledge and apply to real-life experiences. RM also explained her use of project-based learning units, where the students must solve a problem with their team, and by doing so, they are problem-solving and using high-order thinking skills. One project-based learning activity that RM talked about was the creation of a roller coaster. Each team had to create a roller coaster based on specific parameters. Students must work together to build their roller coaster, as well as prove mathematically that it would withstand all the requirements of the assignment. Not only will these students be able to prove their knowledge to their teachers, they will also remember this project for a lifetime. In addition, using project-based learning activities allows the students to fail, to learn from their failures and try again. This increases the students' level of perseverance and grit, and students work on building a stronger growth mindset.

Tomlinson and Murphy (2015) explained that there should be a differentiation of product, or assessment, for the gifted learners, and that it is not always about the final answer that students calculate. Instead, it should be about how the students got the answers they did. This supports Vygotsky's (1978) social constructivism theory, because students are taking responsibility for their own learning and showing what they know. Several teachers talked about the use of task cards as a strategy to differentiate assessment for their gifted students. Students are given a variety of problems, ranging from simple computation problems, to word problems, on vocabulary questions, and that they must answer the questions in partners. During this partner work, students are expected to use appropriate mathematics vocabulary, as well as words to describe their methods for solving each problem. Assessments were also differentiated through the implementation of technology in the classroom. By using each program's diagnostic assessments, the students could be immediately assessed, and new recommendations assigned based on their skill levels. Students could also show their knowledge using peer coaches. During this assessment strategy, students could teach their problem-solving methods to a small group of students or the whole class. This would show the teacher their mastery of the concept, but it would allow the student to work on their communication skills, as the student would have to explain their way of thinking throughout the problem.

Vygotsky (1978) also discussed the importance of allowing students to be engaged in the learning process. During this phenomenological study, teachers expressed their concern with just allowing gifted students to go off and work on their own. RE explained that teachers must know the students well: their strengths, weaknesses, and habits. "Gifted kids can be lazy and not disciplined" (RE). She explained that in her experience, when gifted students had very clear expectations, they performed better because they knew and understood the expected outcome.

RC explained that gifted students are often the early finishers, who are unwilling to work hard independently; however, if you take those same early finishers and place them with a small group with the teacher, then they work much harder. Overall, teachers agreed that gifted students needed to be a part of the learning process, however, there needed to be expectations the students must meet.

Gardner's (1983) explained how all students learn differently, and that their intelligence cannot be determined by his IQ. He described that each person learns in a unique way, and through his study, the theory of multiple intelligences was created. Teachers who participated in this study agreed that not all students learn the same way as everyone else. RQ described students in her classroom who must stand up to work, others who work better when they are allowed to fidget with something in their hand, listen to music while they work, or sit on a special stool to keep their feet busy while they work.

> Differentiating instruction creates a classroom where students may not all be doing the same thing at the same time. It is not the typical "silent classroom." Instead, students could be up and moving and working with another student to problem solve (RM).

Teachers described that it is necessary to teach the students how to work in a classroom setting like this. "In order for effective learning to be taking place, everyone does not have to be doing the same thing at the same time every day" (RC). When educational material is presented in a way matches the students' learning style, the student is given the opportunity to show his learning creatively; therefore, the student can maximize his learning (Gardner, 1999).

Recommendations for Further Research

The purpose of this qualitative phenomenological study was to explore the practical experiences of teachers with regards to utilizing differentiating instruction with high-ability

learners. The goal was to learn if and how teachers were using differentiated instruction to meet the needs of the gifted students, and what were some effective and ineffective instructional strategies used. In addition, participants shared resources and professional development ideas that could help strengthen a teacher's differentiated instructional strategies. This qualitative phenomenological study took place in an elementary school setting, focusing on third through fifth grade teachers' opinions in the subject area of mathematics in a school district comprised of five elementary schools and two middle schools. This study could be replicated in other areas of similar make-up across the country or the world. However, there are some other recommendations to continue the research of this topic of gifted education.

Focusing on the topic of gifted education, a recommendation for further research would be a qualitative study to explore the classroom experiences of teachers with regards to utilizing differentiating instruction with high-ability learners with a focus on middle school (grades six through eight). During this interview study, teachers would be asked their opinions about how differentiated instruction is taking place in the subject area of mathematics, and what factors (if any) are inhibiting differentiation from taking place. This is an implication for a future study because once students are switching classes, and have several teachers throughout their school day, differentiation may look differently in the middle school setting.

Another recommendation for further research is to conduct a qualitative case study through the means of classroom observations, individual teacher and student interviews, and focus groups to gather data on how differentiated instruction is taking place in the classroom and its effect on student learning. The researcher would include classroom observations of different instructional strategies to meet the gifted students' needs in the classroom. In addition to classroom observation, students and teachers could be interviewed individually, expressing their

opinions about differentiated instruction in order to meet their needs. This case study would give the researcher the opportunity to find how differentiation is taking place in the classroom setting (through classroom observations, focus groups, and individual teacher interviews), how this differentiation is viewed (from both student and teacher interviews), and what the needs are of educators to expand their level of differentiation in the classroom setting (through focus groups and individual teacher interviews).

Moving away from a qualitative study into a quantitative research study in the subject area of mathematics would be another recommendation for further research. In addition to using summative assessment scores, where students have a pretest score and a posttest score, the researcher would also need to survey the teachers, gathering numerical scores of how the teachers feel about their level of differentiation in the classroom, and inhibiting factors that are preventing them from differentiating for the gifted students. In this quantitative research study, teachers would need a variety of assessment data, but they would also need the teacher survey results to help explain the data.

Conclusion

Through this qualitative phenomenological study, it can be concluded that teachers have a variety of classroom experiences with regards to utilizing differentiated instruction with high-ability learners. Teachers understand that gifted students thrive on being challenged academically, and one way to challenge these students is through differentiated instruction in the classroom. In these third through fifth grade classrooms, there is a diverse population of students including: special education, English language learners, below-grade level students, on-grade level students, high-ability students, and gifted learners. There are also students who are

exhibiting poor behaviors throughout the classrooms, and because of this diverse student population teachers must vary their instructional strategies through differentiation.

Differentiation is taking place in the classroom in a variety of methods. While some teachers level students for their mathematics classes, some teachers run small groups, and some teachers create individual pacing guides and project-based learning activities for the gifted students. The use of technology is a differentiation strategy that is used to individualize instruction; it can immediately assess the students and give them recommendations for activities to complete while challenging and motivating gifted learners to keep working. Creating a meaningful mathematics experience for gifted students not only helps the students master the content, but it helps them to stay motivated along the way. Playing mathematics games where the students must practice their computation skills while working with others is a great way to build a meaningful mathematics experience while collaborating with their peers. Differentiation is taking place by a variation in content (what the students are learning), a variation in the process (how the students are learning), a variation in the assessment (how they are showing their knowledge in a final product), or a variation in the environment.

Although teachers could explain the importance of differentiation in the classroom, and describe how they are currently differentiating, all teachers discussed the reality of their classrooms: There is a lack of differentiation for the gifted students. This lack of differentiation occurs for several reasons: there is not enough time for teachers to collaborate with colleagues about how to better meet the needs of the gifted students. During this collaboration time, teachers need to plan lessons, create activities and assessments, and strategize to try to help meet the needs of the gifted students. With so many other topics to discuss during teacher collaboration time, gifted education often gets pushed aside. In addition, in the classroom there is such a focus

on the students with Behavior Plans, Individual Education Plans (IEPs), and 504s due to the legal documentation on those students. There are support staff members such as counselors, psychologists, resource and special education teachers, and paraeducators who support those students through push-in or pull-out services, but there are no push-in or pull-out services specifically for the gifted learners.

Teachers also expressed a concern for a lack of training to meet the needs of the gifted students. Gifted students often struggle socially and emotionally. It was explained that teachers need support to help counsel these gifted learners and give them an opportunity to work with others of their academic level. All teachers have not been properly trained on the basics of a gifted student or how to meet their needs, so basic training for all staff members needs to occur. It was suggested to create a position for a Gifted Teacher on Special Assignment (TOSA), who would act an instructional coach to help guide teachers towards successfully differentiating their instruction for the gifted students. Through this coaching process teachers could observe the coach teaching their students. The coach could observe the classroom teacher, and then the two could sit down and discuss effective instructional strategies to differentiate learning in the classroom to meet the needs of the gifted students. Training could also include technology programs to implement in the classroom, which focused on individualized instruction, small group implementation, or new instructional methods such as Numbers Talks, GLAD, and Kate Kinsella's Academic Vocabulary.

Gifted students are quite capable, and they have individual needs that should be met in the classroom. Since testing to qualify students as gifted stopped four years ago in the school district, teachers are responsible for their own methods of differentiation in the classroom. While some teachers are in favor of not testing students to qualify them as gifted, some teachers

struggle with having to meet the needs of the students in their classroom and respond to parents about their individualized instruction of their child. All the participating teachers in this study showed a desire to prepare the gifted learners to be successful in their futures; however, this looked different for each teacher. Overall, the level of differentiation in the classroom greatly varied across the school district.

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Appendix A: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practioners, who seek to transform society by pursuing ethically-informed, rigorously-researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. The policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

What does "fraudulent" mean?

"Fraudulent" work is any material submitted for evaluation that is falsely or improperly presented as one's own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate's final work without full and complete documentation.

What is "unauthorized" assistance?

"Unauthorized assistance" refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as appropriate. This can include, but is not limited to:

- Use of unauthorized notes or another's work during an online test
- Use of unauthorized notes or personal assistance in an online test setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work

Statement of Original Work (continued)

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University–Portland Academic Integrity Policy during the development and writing of this dissertation.

2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or material from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association.*

Renee Mallot
Digital Signature

Renee Mallot
Name (Typed)

November 4, 2019
Date

Appendix B: Prescreen Instrument

Hello Fabulous Teachers!

My name is Renee Mallot, and I am a fifth-grade teacher. I am currently working on my doctorate, and my focus for my dissertation is gifted and talented education. My study focuses on the identification of how differentiated instruction is being used in the classroom. The goal is to identify if and how teachers are using differentiated instruction to meet the needs of the gifted students. I am looking for teachers at each site (Grades 3–5) who are interested in participating in a phenomenological study (the individual interview should take 30−60 minutes). Everything during the interview is coded and kept confidential.

I know this is a crazy time of year, but if you are willing to participate, I would GREATLY appreciate it! I will work my schedule around your schedule when finding a time to sit down and talk.

Here is the information that I am looking to be included in your email indicating interest in the study:

1. Name (First and Last)
2. School Site
3. Grade Level
4. Have you been teaching in this district for longer than 4 years?
5. Do you have gifted students in your classroom this year?
6. Would you be willing to participating in a phenomenological study? (The individual interview should take 30–60 minutes).
7. Do you have questions for me?

THANK YOU! THANK YOU!

And, if you have any questions, please feel free to email me at [redacted].

Have a great day!

Renee Mallot

Appendix C: Interview Questions

The topic we are studying is gifted education and differentiated instruction. How would you define a gifted student? What does differentiated instruction in the classroom mean to you?

For what types of students do you differentiate the most (gifted, on-grade level, English Language Learner, Resource or Special Education student)? Why is this the population of focus most often in your classroom?

In your classroom, which subject do you often differentiate the most for the gifted students: reading, writing, math, science, social studies?

For the remainder of today's questions, we are going to focus on differentiating instruction for the gifted students. What are some effective strategies that you have used in your classroom when differentiating with your gifted students in the subject area of mathematics? Why do you think these strategies were effective?

As teachers, there are times when lessons do not go the way that we have planned. What are some ineffective differentiation strategies for the gifted students that you have used in your classroom in the subject area of mathematics? What do you think went wrong when you tried these strategies?

What resources do you feel that elementary school teachers need to best support gifted students' needs?

What do you feel are the types of professional development that teachers need in order to deliver the most effective differentiated instruction for gifted students?

Do you think that your gifted instruction has changed in the past four years since the school district no longer tests and officially qualifies students as gifted and talented? If so, how do you think your instruction for these gifted students has changed?