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## **Examining Preservice Teachers' Attitudes, Self-Efficacy, and Differentiating Instruction for Educating Gifted Learners**

Marla Freitag

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EXAMINING PRESERVICE TEACHERS' ATTITUDES,  
SELF-EFFICACY, AND DIFFERENTIATING INSTRUCTION FOR GIFTED  
LEARNERS

by

Marla Diane Freitag

A Dissertation  
Submitted to the Graduate School,  
the College of Education and Human Sciences  
and the School of Education  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

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## ABSTRACT

This study examined preservice teachers' attitudes, self-efficacy, and use of differentiation for gifted learners during the various stages of a teacher education program. The theoretical framework of this study was based on the premise that implicit personality theories held by preservice teachers influence both attitudes towards gifted learners and instructional practices in the general education, elementary classroom. The research design utilized quantitative methods to gather data from undergraduate general education preservice teachers from two regional universities within Mississippi. A total of 204 preservice teachers completed the Survey of Practices with Students of Varying Needs. Data gathered during this study was analyzed using descriptive statistics and several univariate ANOVAs. Results indicated statistically significant differences between the stages of the education program for preservice teachers' attitudes toward gifted learners as well as their attitude toward differentiation. In addition, statistically significant differences were found between the stages of the education program in their use of differentiated instructional strategies for gifted learners. Results indicate preservice teachers' positive attitudes, self-efficacy, and use of differentiation increase as teachers progress from the first semester through the last semester of a teacher education program.

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## DEDICATION

This dissertation is dedicated to my wonderful family and friends. First, thank you to my sons, Zachary, Ethan, and Josh— being your mom has been the greatest honor of my life and to my stepsons, Cody, Devin, and Justin as well as my amazing mother-in-law, Dorothy. Thank you to all of you for enduring the many years of me being a student and for your unwavering support and encouragement through this long process. I love you all to the moon and back and I am so lucky to be in your lives.

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## LIST OF ABBREVIATIONS

<i>GAT</i>	Gifted and Talented
<i>GE</i>	General Education
<i>NAGC</i>	National Association of Gifted Children
<i>USM</i>	The University of Southern Mississippi
<i>USP</i>	Underserved Student Populations
<i>SOP</i>	Survey of Practices with Students of Varying Needs
<i>SPSS</i>	Statistical Package for the Social Sciences

## CHAPTER I - INTRODUCTION

### **Introduction of the Problem**

Today's general education (GE) classroom is often a dynamic, inclusive learning environment that encompasses students with varying ability levels and skillsets (Gagne, 2007; Sueker, 2011). As a result, gifted and high achieving students routinely share the same GE classroom with students who may have deficits and limited abilities in one or more academic areas. Regardless, it is the teacher who is tasked with developing the academic potential in *all* the students within their classroom. For this reason, a teacher needs to have a variety of instructional tools with extensive pedagogical practices and a strong self-efficacy to ensure all students achieve academic success.

*Gifted education* refers to particular practices, strategies, procedures, models, and policies services teachers use when providing for gifted learners unique needs (Delisle, 2006; Purcell & Eckert, 2006). Within gifted education, meeting gifted learners' educational needs has been a primary goal for many decades (Delisle, 2006; Purcell & Eckert, 2006). Research shows that the "one size fits all" approach to educating students in the GE classroom does not allow for optimal growth in both academic and social-emotional areas for every student (Daugherty, 2010; Kondor, 2007). As a result, some students are left behind and do not achieve the expectations set for them each year. In the era of high-stakes testing the academic needs of students who are gifted can be overlooked because the primary focus is on bringing up the lowest-performing students (Colangelo, Assouline, & Gross, 2004; Sueker, 2011). Gifted learners' academic needs can be neglected if the instructional pace is designed with only the average or below-average ability levels in mind or if teachers lack pedagogy or self-efficacy in educating

gifted learners in general (Gagne, 2007; Troxclair, 2013). Some parents, as well as educators, have wondered why high achieving students need additional instructional support if they have already reached their expected grade-level goals. Roberts and Inman (2015) stated it so simply “when proficiency is the goal in a classroom, it is actually *no* goal at all for children who are already at the proficient level” (p. 15).

### **Background**

Gifted education, in general, has had a long and storied history. There is evidence to support the idea that educating intellectually talented students has existed for hundreds of years (Missett & McCormick, 2014). As with all areas of education in American society, gifted education has seen its share of setbacks and accomplishments with periods of high enthusiasm and minimal interest. Conversely, the same ebb and flow in curiosity regarding gifted education and gifted learners witnessed in the early days continues even today. However, over the last decade, numerous recommendations and suggestions have been made to help advance gifted education (Jolly, 2018) while focusing on better meeting gifted learners’ needs. In order to understand the major issues facing these students in today’s classroom, we must examine some key components related to gifted education as a whole. Chapter 1 begins with providing background and history of gifted education including the impacts from (a) key legislation throughout the years, (b) issues which face gifted education today, and (c) the need for differentiated strategies.

### **Brief History of Gifted Education in the U.S.**

America’s first true interest in educating students with gifted abilities began in the late 1950s. As a result of Russia’s successful Sputnik mission, the National Defense Education Act of 1958 (NDEA) began providing federal aid or funding for public



education to in an effort to make the U.S. more competitive worldwide particularly in areas such as science and technology (Jolly, 2018; Karnes & Marquardt, 1991). However, it was the Elementary and Secondary Education Act (ESEA) of 1965 that changed the federal government's role in public education (Jolly, 2018) by both broadening and expanding the purpose for federal funds in education (Karnes & Marquardt, 1991). Early gifted education advocates alarmed that gifted students were not directly included in ESEA, testified before Congress on its importance and an amendment known as the Gifted and Talented Children's Educational Assistance Act (1969) was added to ESEA.

Although the educational relevance of gifted students appeared to be acknowledged by this amendment, no additional funding or future funding was established for gifted programs. This is due to the fact that gifted education was only added to certain areas within ESEA (e.g. Title III, Title V) which funded activities to help identify best practices in gifted education and by providing for states through grant projects (Jolly, 2018). During this same time, additional legislation that included gifted and talented students would also be passed such as the Higher Education Act of 1965, but the primary focus was on teachers' needs. Unfortunately, even though new legislation placed "the needs of gifted children on par with the requisites of other special learners, but without the benefits of funding" (Jolly, 2018, p. 147).

### **The Marland Report**

While the Education Amendments of 1969 originally noted a definition for gifted and talented children, it was the congressional report Education of the Gifted and Talented known more commonly as The Marland Report (Marland, 1972) that provided one of the first federally recognized definitions for giftedness in the U.S. (Karnes &

Marquardt, 1991, 2000). Within the report, the Marland Report also identified six potential areas of giftedness (a) general intellectual, (b) specific academic aptitude, (c) creative and productive thinking, (d) leadership, (e) visual and performing arts, and (f) psychomotor. According to this report, it was officially noted that “gifted students require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contributions to self and society” (Marland, 1972, p. 16). The Marland Report also exposed funding limitations accessible through ESEA for gifted programs at both the federal and state levels. As a result, the Office of Gifted and Talented was established in 1975 to focus on providing funding for students from a variety of sources (i.e. government, private organizations, businesses) and increase efforts related to the identification process of particular student populations (i.e. females, minorities, disadvantaged).

### **National Excellence**

Although there was relatively strong support for gifted education during the 1970s, this enthusiasm was short-lived. In the 1980s, gifted education advocates saw an increase in calls for eliminating gifted classes in an effort to reduce what some perceived as the negative impacts related to tracking students particularly for minority populations. In addition, animosity towards gifted education and gifted learners was growing among parents of their typically developing peers with many viewing gifted education as only for elitists and determined it to be unnecessary (Davis, 2006). The push for bringing low performing students to competency levels was beginning to take hold as the primary focus of our national education system (Delisle, 2014). In 1982, the Office of Gifted and Talented dissolved after unfavorable results from a government study showed little

impact in the focus areas. As a result, there was little available funding in many states and districts for programs that many considered to give special attention to children who were already academically successful. It often appears that “more than any other area of special education, gifted child education has been seen as expendable, not essential” (Delisle, 2014, p. 8).

A renewed call for attention to gifted learners’ needs came in the 1990s in a report by Ross (1993) titled *National Excellence: A Case for Developing America’s Talent*. Findings from this report show that gifted learners received the exact assignments as their classroom peers as much as 84% of the time. Similar to the Marland Report years earlier, Ross called for support of gifted learners and spotlighted their importance in the future of American society. The report acknowledged that children who are gifted play a unique part in society as many become tomorrow’s engineers, doctors, political leaders, authors, entrepreneurs, composers, playwrights, corporate leaders, innovators, and lawyers resulting in immeasurable contributions to society in general (Colangelo & Davis, 2002; Davis, 2006; Davis & Rimm, 2004). For this reason, Ross felt it was imperative that these children’s talent be promoted and not wasted.

### **The Javits Act**

Through the creation of the Javits Gifted and Talented Students Education Act (1988), federal funding was again allotted—but only for specific functions. Funding focused primarily on providing multi-year grants for research-based projects in gifted education to universities, the establishment of the National Research Center on the Gifted and Talented along with increased focus on improving identification of gifted and talented students from underserved populations particularly students (i.e. economically

disadvantaged, limited English proficiency skills, twice-exceptional) (Jolly, 2018; Swanson, 2016). Since its implementation, The Javits Act has been instrumental in helping to identify thousands of gifted learners from underserved populations.

The Javits Act continued in its original capacity until 2011 when a congressional study determined it had minimal impact on the targeted areas (Delisle, 2014). This began the cyclical nature that currently exists with inconsistency in funding each year resulting in some years with no funding at all (U.S. Department of Education, 2006). The Javits Act was reauthorized through the Every Student Succeeds Act (ESSA) in 2015 and is currently funded through 2019; however, cuts have been proposed for the fiscal year 2020 (Jolly, 2018). In the National Surveys of Gifted Programs Executive Summary (2014) the authors noted that “school districts report being dependent on local funding for providing gifted education services” (Callahan, Moon, & Oh, 2014, p. 3). Today, some states particularly those who consider gifted education as part of special education choose to assist in providing gifted programs at the state or local levels for gifted learners (Callahan et al., 2014). However, currently there are no allotted federal funds to provide gifted education programs specifically for gifted learners at either the state or local levels (Callahan et al., 2014; National Association for Gifted Children, n.d.-a).

### **Issues Facing Gifted Education Today**

Gifted education’s current state in the U.S. is inconsistent as it lacks a federal mandate or policy forcing states to develop their own strategies for addressing gifted students’ needs. Limited state funding has led to reduced or eliminated gifted programs resulting in more time that gifted students are spending in the GE classroom. This has impacted gifted education as a whole and continues to negatively affect students in

classrooms across the country ultimately resulting in vast disparities in how gifted students are being educated (Plucker & Callahan, 2014). As a result, some experts in the gifted education field consider children who are gifted to be the most neglected student minority group (Delisle, 2014) within our current education system. “It is hard to serve gifted children well when we can’t even agree on who they are, and it is difficult to advocate for a special population of learners when we can’t effectively argue that our efforts on their behalf will guarantee positive results” (Delisle, 2014, p. 13).

### **Lack of Federal Mandate**

Educational policies such as Individuals with Disabilities Education Act (IDEA) (IDEA, 1997) and No Child Left Behind (NCLB) (U.S. DOE, 2002) addressed students with disabilities’ needs and struggling students respectively (Gallagher, 2004) but neither policy specifically included most gifted learners. Even though the IDEA reauthorization (2004) did include students who are gifted and have been identified with a disability (i.e. twice-exceptional), the majority of students identified as gifted did not have their unique educational needs addressed in either IDEA or NCLB (USDOE, 2002; IDEA, 2004). Unlike students who receive special education services, gifted students are not protected by federal law with the same education rights and funding (Jolly, 2018).

Although through the Javits Act federal funding is provided for specific areas (i.e. research, grants) within gifted education, currently no federal mandate exists requiring states to provide gifted programs for gifted learners (Callahan et al., 2014; Foley-Nicpon, Allmon, Sieck, & Stinson, 2011; Karnes & Marquardt, 1991). The absence of federal policy or mandate for gifted education has forced states to develop their own strategy for addressing gifted learners’ needs (Callahan et al., 2014). While all 50 states have some

legislation to address gifted education, variability exists within the policies themselves further displaying a lack of cohesion nationally. Consequently, in an era where the emphasis is on high stakes testing, gifted education programs are not a financial priority for many state education systems and can result in eliminating gifted programs or additional restrictions in programs that are being offered. This contributes unequal services for students particularly those in the most financially depressed schools or districts (Landrum, Katsiyannis, & DeWaard, 1998; Shaunessy, 2003). On the contrary, states who are more financially stable have worked to provide optimal programming options for gifted learners with many having mandates that address major areas such as identification, services, and teacher certification.

According to the National Association for Gifted Children's State of the States Report in Gifted Education (NAGC & Council of State Directors of Programs for the Gifted, 2015), 32 states have a mandate related to gifted education with 23 also having a state law that is specific to gifted education. Only four of the 32 states with mandates fully fund gifted education and 20 provide partial funding while eight states did not fund their mandate. Further analysis revealed that 28 states require both identification and services and four states required identifying gifted students only. Conversely, the gifted identification process is often quite different from state to state (Foley-Nicpon et al., 2012) and few if any use the same criteria to determine eligibility for gifted programs (Davis, 2006). Subsequently, even though NCLB (USDOE, 2002) provides a federal definition for giftedness, states still have the option to provide their own definition. This report found that 37 states have a definition for giftedness with 34 states including intellectually gifted in their definition while 24 states included academically gifted, and

21 states included creatively or artistically gifted in their definition for gifted. However, only a few states (i.e. less than 10) specifically mentioned identifying and providing gifted programs to students from underserved populations.

Within the Mississippi Department of Education's (MDE) Regulations for Gifted Education Programs (2013), the state identifies four categories for giftedness (a) intellectually gifted, (b) academically gifted, (c) artistically gifted, and (d) creatively gifted (MDE, 2013). Each category has a separate definition along with a separate identification process. The identification processes are divided into six stages for each eligibility category to identify gifted learners who are intellectually, artistically, and creatively in grades 2-12 and creatively gifted learners in grades 9-12.

Gifted education programs in Mississippi are mandated for those public-school students in grades 2-6 only who are identified as intellectually gifted (MDE, 2013). These mandated gifted education programs are conducted in a self-contained setting (i.e. pullout) by a teacher with a gifted education endorsement for a "recommended 300 minutes per week or a minimum 240 minutes per week" (MDE, 2013, p. 25). Conversely, Mississippi does allow (but does not fund) gifted programs for students identified as intellectually gifted in grades 7-12, academically gifted in grades 9-12, artistically gifted in grades 2-12, and creatively gifted in grades 2-12. Funding for these programs must be provided at the local level if schools elect to offer them to students. As a result of limited programming and funding constraints, most gifted students in Mississippi, as do millions of gifted students across the U.S., receive most if not all of their academic learning in the GE classroom (NAGC, 2008; Troxclair, 2013).

## **Lack of National Gifted Education Standards**

With federal funding for gifted education came the need to determine national education outcomes along with program expectations. In 1998, organizations such as CEC and NAGC filled the gap left by an absence of national leadership from the federal government. NAGC (1998) provided educators with guiding principles for creating an appropriate curriculum to meet the needs of gifted students in the classroom which centered on (a) providing differentiated instruction, (b) curriculum compacting and/or modifications, (c) flexible pacing or accelerated learning, (d) opportunities for content or grade skipping, and (e) differentiation in options, instructional practices and resource materials. These guiding principles helped to develop the foundation for future standards related to teaching gifted learners. The original gifted education standards created by NAGC in 1998 have been revised as recently as 2010.

NAGC's *PreK-Grade 12 Gifted Programming Standards* (2010) were created primarily for teachers in a PreK-12 classroom who work with gifted learners and once again reinforces the use of evidence-based practices in the classroom. These standards have six areas of focus (a) learning and development, (b) assessment, (c) curriculum planning and instruction, (d) learning environments, (e) programming, (f) professional development. In addition, NAGC-CEC (2013) *Teacher Preparation Standards in Gifted and Talented Education* were created for those preservice and in-service teachers looking for certification or endorsement in gifted education. With only limited action by the federal government in gifted education and the continued absence of a mandate or



national program guidelines, these recommendations have been endorsed by a variety of stakeholders including national organizations like the Council for Exceptional Children (CEC).

### **Lack of Training in Gifted Education**

With limited funding for specialized gifted programs, increased responsibilities are being placed on GE teachers for being the primary source for educating gifted students (Daugherty, 2010). Unfortunately, many GE teachers have little or no training in gifted education (Berman, Schultz, & Weber, 2012; Daugherty, 2010; Peters & Jolly, 2018). Although the expectations set by the Higher Education Opportunity Act (Higher Education Opportunity Act, 2008) are that teacher candidates are to receive training for meeting the learning needs of *all* students including gifted students prior to receiving their license (Berman et al., 2012). NAGC and Council of State Directors of Programs for the Gifted (CSDPG) (2015) confirmed that major universities typically do not offer gifted education degrees and only half of the states provide opportunities for teacher certification in gifted education. Nevada is currently the only state where pre-service teachers are required to complete a separate course in gifted education (NAGC, 2015; Peters & Jolly, 2018). In fact, university-level courses that are offered in gifted education are typically grouped with a special education course (Peters & Jolly, 2018) on students with behavioral or learning disabilities (Szymanski & Shaff, 2013) resulting in gifted education content receiving minimal attention.

Consequently, as cited by Farkas and Duffet (2008) the Fordham Institute found that a majority (as much as 58%) of in-service GE teachers reported receiving no training or professional development focused on teaching the academically advanced students.

Unfortunately, if teachers do not have adequate training in gifted education specifically regarding gifted learners' characteristics they may "simply not be aware that these children exist, so they don't notice them, even when they have one right under their nose" (Ruf & Ruf, 2005, p. 232). With that being said, all teachers need at least a basic understanding of gifted and talented students' characteristics and academic needs (Barnard-Brak, Johnsen, Pond Hannig, & Wei, 2015) in order to provide adequate learning opportunities for these students.

Preservice teachers typically receive training in their teacher preparation license program in a university setting. In-service teachers can also receive training in their master's level education program into gifted education or electives in a GE related area and still others offer a Specialists level program in gifted education. In-service teachers who are actively teaching in a classroom can also receive gifted education training as part of their professional development (Peters & Jolly, 2018) from their school or district.

### **Teacher Bias and Misconceptions**

In addition to the lack of teacher training, there are other factors that influence the success of students who are gifted in the classroom as well, such as the existing bias and misconceptions held by some teachers regarding gifted learners and gifted education. Misconceptions can exist for a variety of reasons one of which includes the idea that gifted learners do not need support in the classroom. This could be due to the fact that students who have more noticeable academic limitations stand out or need more teacher assistance, adaptations, or modifications to be academically successful. Whereas, many students with higher abilities either seek less academic help from their teacher, learn to blend in, or develop coping strategies (i.e. underachievement) resulting in the teacher

perceiving them as performing at an adequate level (i.e. on grade level) (Ruf & Ruf, 2005). Unfortunately, GE teachers may be unaware that underachievement can result in unchallenging academic environments (Robinson, 2002). As Robinson (2002) goes on to say, students who have overcome underachievement cite the important role teachers play in helping them to reach their academic potential as well as increase their social-emotional skills development (i.e. self-concept, self-worth, self-esteem).

Research shows that misconceptions and bias influence identifying gifted learners in general as some teachers fear overidentifying gifted students as they may be seen as less competent than their peers. Students seen as borderline rarely receive a referral for gifted programming instead teachers typically nominate those students seen as teacher “pleasers” (i.e. finishes all work on time, helps teacher around classroom) (Davis, 2006) due to limited pedagogy related to gifted education. Furthermore, some teachers perceive that a students’ socioeconomic status, particularly affluency, plays a role in whether a student is gifted or not (Moon & Brighton, 2008). These existing bias and misconceptions along with others, such as stereotyping, can and do influence which students are recommended for and receive gifted services (Baudson & Preckel, 2013).

Consciously or unconsciously, teachers often form a variety of academic expectations and views of their students depending on factors such as their gender, race, and social class (Johnson & Krisonis, 2006; Moon & Brighton, 2008). Teacher bias contributes to fewer referrals for non-Caucasian students for gifted identification assessment further contributing to underrepresenting certain student groups in gifted programs. Additionally, teachers are almost three times as likely to refer a White male student for gifted assessment than other student groups such as females, minority

students, or students from low socioeconomic groups (Johnson & Krisonis, 2006). Unfortunately, GE teacher misconceptions about giftedness can also affect what they perceive giftedness to be. Some teachers mistakenly think that a student with limited English proficiency cannot be gifted while others have difficulty viewing a student with disabilities that are cognitive or physical as someone who could also be gifted (Allen, 2017; Moon & Brighton, 2008).

Other misconceptions held by GE teachers include the idea that gifted students all work independently and have strong skills with advanced vocabularies (Moon & Brighton, 2008). As a result, many GE teachers have a difficult time perceiving that students without these skills as being gifted. “Though willing to recognize differences in ability at the low end of the spectrum, educators seem less willing, and perhaps less able, to notice differences at the high end” (Ruf & Ruf, 2005, p. 232). Without adequate training, teachers’ existing misconceptions and perceptions can play a role in their attitude towards their students and how they view their students (Baudson & Preckel, 2013; deWet & Gubbins, 2011). This further perpetuates implicit personality theories held by teachers.

### **Teacher Attitude**

Teachers’ perceptions and therefore their attitudes are influenced by their training, self-efficacy, and personal beliefs (Allen, 2017). Teacher attitude impacts the way teachers educate and even relate to gifted learners they come into contact with. GE teachers may sometimes have the attitude that educating gifted students is a burden or a nuisance, while others may be somewhat intimidated by students’ giftedness. “Highly intelligent and highly educated teachers with a negative attitude towards giftedness make

bad teachers for the gifted” (David, 2011, p. 71). Additionally, teachers with negative attitudes or views toward giftedness are less likely to seek professional development training in gifted education (Geake & Gross, 2008). Most within the gifted education profession believe that the GE teachers are not intentionally being hostile or neglectful of gifted learners in general. Davidson and Davidson (2004) pinpoint the problem stating teachers’ lack of attention for gifted learners’ needs center on complacency with the belief that they are doing enough for these students. This naïve attitude is reflected in the instructional strategies and activities that teachers use in their classroom.

### **Teacher Self-Efficacy**

Self-efficacy is directly linked to student achievement levels and learning (Hong, Greene, & Hartzell, 2011). Providing training in gifted education in teacher preparation programs could be one way to positively impact gifted learners in the GE setting (Peters & Jolly, 2018). In addition, research shows that many gifted education strategies are also highly effective for most students in the GE setting (Hertzog, 2005). As a result, having teachers with a deeper understanding of gifted learners and their recommended education strategies could improve learning opportunities for all students.

It can be said that all teachers want their students to be successful. However, the effects of the lack of adequate training impact teacher self-efficacy (i.e. teachers’ confidence levels) and can have immediate as well as long-term effects on students’ abilities to be successful. Opportunities to increase teacher self-efficacy address these pedagogical needs thereby helping them to better meet students’ needs within their care. By providing GE teachers with basic information on gifted learners characteristics and introducing teachers to successful instructional strategies for this population, all students’

academic goals in the GE classroom including gifted students have a better opportunity of being reached and teachers are more confident in their ability to meet students' needs.

### **Need for Differentiated Instructional Strategies**

In years past, gifted students were educated in their own specialized learning programs (Sousa, 2003). Nevertheless, today gifted students spend the majority (up to 80%) of their school day in the GE setting while receiving only a few academic hours each day or week with a teacher certified in gifted education (i.e. teachers of the gifted) (NAGC, 2008; Troxclair, 2013). As a result, the responsibilities of educating this unique student population fall not only on teachers of the gifted but also on GE teachers.

Therefore, both groups of educators should be familiar with gifted education instructional strategies and have a basic knowledge about other factors (i.e. social-emotional characteristics) that impact students who are gifted and talented.

Research also shows that many gifted elementary students already know between 40% and 50% of the curriculum material for their grade level before the school year begins (NAGC, 2008). This is problematic because the early years in school strongly predict a student's later academic success and educational attainment (Entwisle, Alexander, & Olsen, 2005). Educating students requires more intentional planning and goes beyond providing students with additional work or letting them "help" their struggling classmates in their free time (Berman et al., 2012). With that being said, these students have the right to receive educational services which provide opportunities for academic work that is challenging, rewarding, and at their level of need (Berman et al., 2012; Tomlinson, 2005). Interestingly, many strategies originally developed for gifted learners are capable of "greatly strengthening educational approaches for all children and

can benefit gifted students in regular classroom settings, as well as challenge other students” (Robinson, 2002, p. 4).

### **Differentiated Instruction**

Cross (2002) defines gifted learners as having a substantially advanced ability in one or more domain areas that requires educators to adapt learning environments for typically developing students (i.e. differentiate) to better suit gifted learners’ academic needs. This differentiation requires teachers to actively plan the learner’s outcomes, therefore, allowing the teacher to know if students have reached those goals or if modifications need to be made to assist them. Differentiation involves multiple steps (a) instructional unit or content planning, (b) pre-assessment (only then do you know individual needs), (c) differentiating materials utilized in the learning process, and (d) post-assessment or the product which resulted (Roberts & Inman, 2015).

Research regarding how GE teachers differentiate for their gifted students suggest that those who used differentiation such as independent study, learning contracts, accelerated learning opportunities, ability grouping and curriculum compacting provided a richer, more challenging learning environment for gifted students in their GE classroom setting (Daugherty, 2010; VanTassel-Baska, 1994). By differentiating instructional strategies, teachers can be sure that students are receiving a rigorous and challenging learning experience thereby meeting the individual students’ needs regardless of their ability level. According to Tomlinson and Kalbfleisch (1998), differentiated classrooms are responsive to varying readiness levels, interests, and students’ learning profiles.

“With suitable supports, including differentiated instruction, students ranging from gifted

to those with significant disabilities can receive an appropriate education in GE classrooms” (Lawrence-Brown, 2004).

### **Limited Differentiated Instruction**

In a national study, the Fordham Institute found that 84% of general education teachers said that differentiation was either ‘somewhat’ or ‘very’ difficult to implement at the appropriate levels (Farkas & Duffet, 2008). One extensive study (Colangelo, et al., 2004) focused on acceleration and declared differentiation such as accelerated learning opportunities to be an educational practice with extensive research related to its effectiveness, yet it is rarely used. This insight suggests gifted learners “pay a very high intellectual price” when they are kept in GE classrooms and are not given differentiated learning opportunities (Davidson & Davidson, 2004, p. 59). Quality educational systems including classroom teachers must consider all students’ needs allowing for accommodations for those at the lowest levels as well as those at the highest which provides “both equity and excellence” (Davis, 2006, p. 22) in our schools.

### **Theoretical Framework**

The theoretical framework “is the foundation from which all knowledge is constructed (metaphorically and literally) for a research study” (Osanloo & Grant, 2016, p. 12). It guides the researcher’s thinking and provides the lens in which all aspects of the topic of research are then explored. The theory that is guiding this quantitative study is the implicit personality theory that focuses on “subjective views that may include prejudices and stereotypes (the person) is not even aware of” (Baudson & Preckel, 2013, p. 37) In seminal literature, Pedersen (1965) described implicit personality theory as when a person forms certain opinions about something from their own preconceived bias



or beliefs. For this study, it is applicable due to the preconceived bias, stereotyping, and misconceptions' teachers can have toward gifted learners (deWet & Gubbins, 2011; Moon & Brighton, 2008) in conjunction with the influence these have on teacher's attitude, self-efficacy, and the types of instructional strategies or differentiation they plan to use in their future GE classrooms.

Some researchers have concluded that implicit personality theories frequently found in new and novice teachers can play a major role in teachers' attitudes towards students (deWet & Gubbins, 2011; Guskey, 1995; Tucker & Jackson, 2005). Baudson and Preckel's (2013) quantitative analysis examined implicit personality theories held by GE teachers in German classrooms. Implicit personality theories have been found to be strong predictors of teachers' behaviors and contributed to how teachers viewed their gifted learners. Moreover, findings show no statistically significant difference between preservice and in-service GE teachers on how implicit personality theories affected their perceptions of gifted learners. These factors support the premise that, whether intentionally or unintentionally, both preservice and in-service GE teachers can have misconceptions and biases toward gifted learners. Further implications include the negative effect misconceptions and biases along with teachers' attitudes may have on the identification process for gifted programs through misidentifying or under-identifying students for gifted services.

### **Statement of the Problem**

The absence of a federal mandate for gifted education and funding inconsistencies for gifted programs have resulted in gifted learners spending the majority of their school day in the GE classroom. Existing literature (Hong, et al., 2011; VanTassel-Baska &

Stambaugh, 2005) has warned of the difficulties in serving gifted students' needs adequately in the GE setting when teachers have a limited pedagogy. Preservice and in-service GE teachers' knowledge of basic information about gifted learners (i.e. characteristics, research-based instructional methods) has been examined in the literature (Hong, et al., 2011; VanTassel-Baska & Stambaugh, 2005) along with their attitude as both directly correlates to the experiences gifted learners have in the GE classroom. "Gifted and talented learners in most classroom settings endure unchallenging curriculum, a slow pace of instruction, and a state of ignorance by many of their GE teachers" (Berman et al., 2012, p. 1). Several studies have examined preservice and in-service teachers' misconceptions and the impact they have on teachers' attitudes towards gifted learners and giftedness itself (Bangel, Moon, & Capobianco, 2010; Baudson & Preckel, 2013; deWet & Gubbins, 2011; Graffam, 2006; McCouch & Siegle, 2007; Moon & Brighton, 2008; Szymanski & Shaff, 2013).

Existing research (Book, Byers, & Freeman, 1983; Szymanski, Croft, & Godor, 2018; Xiang, Dahlin, Cronin, Theaker, & Durant, 2011) shows that preservice teachers typically leave their teacher education programs with similar beliefs as they had prior. Therefore, they take these attitudes and beliefs regarding students and instructional practices with them into the teaching profession (McDiarmid, 1990; Troxclair, 2013). Resulting in these existing attitudes shaping how these novice teachers view students. Most often preservice teachers bring with them attitudes and ideas of what teaching and learning are like regarding the typical learner but not necessarily students with diverse learning needs. Furthermore, research has highlighted the importance of differentiating to meet the learning needs of students with differing abilities. Additionally, the skill levels

of both preservice and in-service teachers not only impact their instructional leadership in the classroom but also significantly influences their self-efficacy in effectively educating their students with differing academic ability levels (Tomlinson et al., 1995).

Currently, little is known about the relationship between preservice GE teachers and their attitudes, self-efficacy, and use of differentiation for gifted learners. Existing studies (Bannister-Tyrrell et al., 2018; Troxclair, 2013) show that teachers' attitudes toward gifted education and gifted learners influence their classroom practices. Yet it is not known if attitudes vary depending on the length of time (i.e. number of years) they have been in a teacher education program.

### **Purpose of the Study**

The purpose of this study was to examine preservice general education teachers' attitudes, self-efficacy, and use of differentiation with gifted learners. Specifically, exploring how their attitudes and self-efficacy influence the current differentiated instruction practices provided to meet the needs of elementary students who are gifted within the GE classroom. The study was designed to examine these factors in preservice teachers at different stages of a teacher education program from two regional universities within Mississippi.

### **Research Questions**

RQ1: Does the stage of the education program make a difference in attitudes toward gifted learners among preservice teachers?

RQ2: Does the stage of the education program make a difference in self-efficacy (i.e. confidence levels) in educating gifted learners among preservice teachers?

- RQ3: Does the stage of the education program make a difference in the use of differentiation for gifted learners among preservice teachers?
- RQ4: Does a difference exist in the use of differentiation of instructional strategies for gifted learners between preservice teachers in the last semester of a teacher education program compared to preservice teachers in the first, second, and third semesters of a teacher education program combined?

### **Justification**

“Unless the special abilities of gifted and talented students are recognized and developed during their elementary and secondary school years, much of their special potential for contributing to the national interest is likely to be lost” (Javits Act, 1988, p. 91). It is a serious issue when students of any ability level fail to develop. However, it can be extremely difficult and even a detriment to our society when those students with extraordinary skills are not given the opportunity to fulfill their potential. Our gifted population as a whole is responsible for so many life-changing accomplishments throughout our history. One cannot think of some of the greatest minds in American history and their accomplishments without mentioning someone who had a uniquely gifted ability.

In 1963, President John F. Kennedy in an address to the nation regarding civil rights in our country stated, “not every child has an equal talent or an equal ability or an equal motivation, but they should have the equal right to develop their talent, their ability, and their motivation to make something of themselves” (see JFKlibrary.org, n.d., paragraph 3). Delisle (2014) acknowledged that children who are gifted comprise the most neglected students in our education system.

According to a national study conducted by the Fordham Institute, researchers found that approximately 58% of GE teachers have had no training in how best to educate academically advanced learners while another 73% of GE teachers agreed that “too often, the brightest students are bored and under-challenged in school and are not given a sufficient chance to thrive” (Farkas & Duffet, 2008, p. 78). The responsibility of educating these students does not fall (nor should it) on the shoulders of gifted resource teachers alone. Consequently, GE teachers share in this responsibility. These types of studies verify what many parents and families of gifted learners already know—most GE teachers lack the ability to recognize and support their children in their academic lives. Existing research (Feiman-Nemser, 2001; Goodwin, 2002) demonstrates that teachers bring with them their own values, beliefs, and attitudes as they embark into the world of teaching. This study examined the influence teachers’ existing attitudes on their (a) perspective towards gifted learners, (b) self-efficacy (i.e. level of confidence) in educating gifted learners, and (c) the use of differentiated instruction for gifted learners.

### **Definitions of Terms**

Below the key terms are presented to provide a definition for those common to the field and those unique to this study.

#### *Acceleration, accelerating learning*

An academic intervention that increases the rate a student progresses through an academic program which helps to match a student to the appropriate level of academic challenge and rigor. This includes full acceleration (i.e. grade skipping) and partial acceleration (i.e. subject matter or content-based skipping) (Southern & Jones, 2015).

### *Asynchronous Development*

Results when a child's cognitive development is not synchronized or taking place at the same rate as their physical or emotional development and can result in a child's mental abilities being far greater than other typically developing, same-age peers. Asynchronous development increases with as intellectual capacity increases (Delisle, 2014).

### *Attitude*

"The state that influences or modifies the individual choices of personal action" (Gagne, 2002, p. 229).

### *Curriculum compacting*

A form of differentiation that allows for adjustments to be made to the curriculum for students who have previously mastered the topic of inquiry by replacing the topic with new content or providing enrichment activities to extend or deepen the learning of topic (Plucker & Callahan, 2014).

### *Curriculum modifications*

Regular classroom curricula that have been adapted, modified, or replaced to meet gifted learners' unique needs (NAGC-CEC, 2013).

### *Differentiation*

A type of instructional strategy recommended for all learners particularly gifted learners that requires teachers to be responsive to students' varying abilities, interests and learning profiles (Tomlinson & Kalbfleisch, 1998) while matching the curriculum to the learning needs of students to facilitate the ongoing learning process for all students within a classroom setting (Roberts & Inman, 2015).

### *Enrichment*

Activities that add to or extend the current curriculum or topic of learning (NAGC, 2010; NAGC-CEC, 2013).

### *Flexible grouping*

Allows for students with varying abilities to participate in groups based on their interests or skill area (NAGC, 2008).

### *In-service teacher*

Person who is currently teaching in a general education elementary classroom.

### *Gifted education*

Those services, practices, procedures, theories, and policies which educators use to provide an appropriate level of challenge and rigor to meet of gifted learners' academic and social-emotional needs (NAGC, 2015).

### *Gifted education training*

Training that focuses on educating teachers regarding gifted education specifically gifted learners' characteristics, curriculum components, instructional strategies and practices, gifted programming standards, in addition to current identification process and procedures used for recommending students for gifted services (Karnes & Bean, 2014; NAGC-CEC, 2013; VanTassel-Baska & Stambaugh, 2006).

### *Gifted learner; gifted and talented student*

Children or youth that demonstrate high-performance capability in areas such as intelligence, creativity, artistic ability, leadership, and a specific academic area and who

require services not ordinarily provided by the school in order to fully develop these capabilities (Javits, 1988).

### *Implicit Personality Theory*

Used to describe a person's personal views that can include both prejudices and stereotyping and can be "powerful predictors of behavior" (Baudson & Preckel, 2013, p. 37). A person may be totally unaware that they hold these prejudices.

### *Instructional strategies*

Those practices, methods, and techniques used by teachers in educating students within a K12 setting. In this study, differentiated instructional strategies include enrichment, acceleration, curriculum compacting, and curriculum modification (NAGC, 2010; NAGC-CEC, 2013).

### *Misconception*

A mistaken notion or erroneous conception (Webster's Dictionary, 1996). For the purpose of this study, misconceptions are not primarily negative in nature instead they are categorized as incorrect assumptions.

### *Pedagogy*

Describes the knowledge and practices of teaching and those practices related to learning about teaching (Loughran, 2014).

### *Preservice teacher*

Individuals in an elementary teacher education program at an institute of higher learning and are actively working to acquire a K12 teaching license who are enrolled in programs early childhood, special education, or general education but plan to teach in a GE classroom upon completion of their program.



### *Professional development*

Teacher education training that occurs at the state, district, or local school level to address legislation, mandate requirements, or a specific need related to staff or faculty.

Professional development is conducted with the expected result of “improved instructional quality” (Peters & Jolly, 2018, p. 478).

### *Teacher of the Gifted*

Term used to describe teachers who educate gifted learners who have certification in gifted education or a degree in gifted education (NAGC, n.d.-b).

### *Teacher perceptions*

Individual experiences influence how one sees the world around them. Cultural and linguistic differences may obscure one’s perception and understanding of another person and/or student (i.e. view minority or ELL students as less intelligent) (Szymanski & Shaff, 2013).

### *Teacher self-efficacy*

An individual’s belief in their own ability to perform specific academic tasks at a successful level (Bandura, 1977). Teacher self-efficacy can help influence a variety of factors such as goals, attitudes, referrals for additional programs (teaching strategies, and can be impacted by the length of one’s teaching career.

### *Underachievement*

A discrepancy that occurs between a student’s academic potential and their actual performance (Emerick, 1992). Underachievement can originate with from physical, mental, emotional issues, or result from a “mismatch between the student and the school environment” (Reis & Greene, 2016).

### *Underserved student populations*

Gifted learners from populations that are not equally represented in gifted programs. These include ethnic and cultural minority groups such as Native American, African American, Pacific Islanders, Hispanic, and some subgroups of Asian-American populations along with rural, twice-exceptional, English language learners, and economically disadvantaged students (Siegle et al., 2016).

### **Delimitations**

The primary purpose of this dissertation was to examine the attitudes of preservice teachers to determine if differences exist in attitudes toward gifted learners, in their self-efficacy, and in the use of differentiation for educating these students. These participants were selected from two universities within one region of the state as it was not feasible to survey students in every university within the state. Participants were limited to only those preservice teachers who are currently or planning to teach in a GE classroom. This study's delimitations also included focusing on only differentiation of instructional strategies used by GE teachers in grades 2-5 as these are the grades covered in the state mandate for gifted education for intellectually gifted learners (MDE, 2013). Although 6-8 grades are also covered in the state mandate, these grades are considered middle school grades within most schools in the state (MDE, 2017) therefore middle, high school, and subject-specific GE preservice teachers were not be included as participants in this study.

### **Assumptions**

It is assumed that all participants answered the questions on the questionnaire honestly and to the best of their ability. Additionally, it was assumed that participants comprised a diverse group of teachers with the understanding that participants would reflect the population of GE elementary teachers as a whole across the country with most being White, middle-class, and female (Cross, Cross, & Finch, 2010; Szymanski & Shaff, 2013).

## CHAPTER II - LITERATURE REVIEW

The literature review presented in this chapter relates to topics relevant to educating gifted learners. This review is organized according to (a) search of the literature, (b) defining gifted learners, (c) educating gifted learners, (d) differentiating instructional strategies, (e) factors that influence teachers, and (f) related studies to measuring the influence of teacher attitudes.

### **Search of Literature**

A search was conducted of published peer-reviewed journals articles related to the topic of instructional strategies in gifted education from 2000-2019. The University of Southern Mississippi's databases that were used include Academic Search Premier, Education Source, ERIC, PsycINFO, ProQuest, and Open Dissertations. Searches included combinations of the keywords: *preservice teachers*, *attitudes*, *teacher attitudes*, *gifted*, *gifted education*, *general education*, *teacher perception*, and *differentiation*. As an additional measure, reference lists of retrieved articles were reviewed along with a thorough search and review of gifted education journals (i.e. *Gifted Child Today*, *Gifted Child Quarterly*, *Journal of the Education of the Gifted*, *Roeper Review*, *Journal of Advanced Academics* and *High Ability Students*) from the time period of interest. Books related to the gifted students' instructional needs, differentiation, gifted education curriculum, and teacher attitudes in gifted education were also reviewed in this literature review process. Articles were screened using the inclusion criteria presented in Table 1 and the exclusion criteria shown in Table 2 with duplicate articles being removed from consideration.

**Table 1***Inclusion Criteria for Literature Review*

Topic	Literature must relate to the keywords: <ul style="list-style-type: none"><li>• gifted students</li><li>• general education or gifted in the regular classroom</li><li>• differentiation</li><li>• preservice teachers</li><li>• in-service teachers</li><li>• teacher perception</li><li>• self-efficacy</li><li>• teacher attitudes</li></ul>
Search Period	Literature was published between 2000 and 2019.
Age-Range	Literature must have participants who are general education teachers of elementary grades (i.e. K-5).
Language	Literature must be written in English.
Research Base	Literature must be based upon empirical research, must be: <ul style="list-style-type: none"><li>• experimental</li><li>• quasi-experimental (either qualitative, quantitative or mixed method)</li></ul>
Transparency	Literature must include a methodology of how the research was conducted (e.g. sample sizes, instruments, and analysis information)
Reliability/Validity	Literature must be determined to be valid and reliable depending on the type of study: <ul style="list-style-type: none"><li>• quantitative studies addressed this concern in the instrument used</li><li>• mixed-method and qualitative discussed in analysis/coding process)</li></ul>

**Table 2***Exclusion Criteria for Literature Review*

Topic	Excluded literature which focused on:
	<ul style="list-style-type: none"><li>• only specific gifted student populations (e.g. twice-exceptional, autistic, ADHD)</li><li>• age groups (e.g. middle school, high school) not addressed in this study</li><li>• teachers of the gifted in a pullout setting</li><li>• identification or social-emotional development of gifted learners only</li><li>• subject area specific (i.e. science class)</li><li>• primarily measuring or evaluating opinions of teachers</li><li>• implementing professional development</li><li>• teacher motivation</li><li>• gifted education endorsement or certification programs</li></ul>
Research Base	Literature based on:
	<ul style="list-style-type: none"><li>• single subject</li><li>• case study</li><li>• pilot study only</li><li>• other literature reviews</li><li>• meta-analysis studies</li><li>• Thesis study</li></ul>

Articles were screened for the inclusion criteria specifically in that the topics related to the keywords of this study; the literature was published from 2000 to 2019; study participants were elementary general education teachers; the articles must be

published in English; the research must consist of experimental or quasi-experimental methods; studies must include a thorough description of how the research was conducted; and studies must be found to be reliable and valid to be included in this literature review. Conversely, articles were excluded if they focused on topics not determined to be relevant to this study or if the research consisted of methods beyond those identified in the inclusion criteria (i.e. single subject, case study).

### **Defining Gifted Learners**

According to the U.S. Department of Education's Office of Civil Rights (2014), there are approximately 3.3 million gifted and talented learners in our education system. Gifted learners are a unique group of students with a higher than average intellectual ability often times far greater than those of their peers (Davis & Rimm, 2004). Definitions for what *gifted* or *giftedness* mean have varied throughout gifted education's history with no one definite consensus as to who exactly should be considered gifted (Robinson, 2002). The concept of a person being gifted was thought to have been first used in the late 1800s by Francis Galton to describe adults with exceptional talent in some area (i.e. gifted chemist). Early beliefs related to giftedness included the thought that children could inherit giftedness from their parents and that only white, affluent, males had gifted abilities. Terman (1925) attempted to further develop a definition for *giftedness* to include those children with high IQs and believed that a child's gifted ability could help predict their future achievement as an adult. Terman's research would eventually lead to his publishing the Stanford-Binet Intelligence Scale for testing IQ and forever changed our education system (Borland, 2005). This led the education system to

have the opportunity to diagnose both intellectual deficiencies as well as giftedness in children in their effort to better meet the academic needs of students.

Hollingworth's (1926) book *Gifted Children, Their Nature and Nurture* is credited for coining the term *gifted* and it is still used today when referring to children with higher than normal abilities in one or more areas. Another pioneer in gifted education, Hollingworth's (1942) research led to a definition for *gifted* as being a childhood potentiality that needed to be nurtured to develop optimally in adulthood. Our current understanding of *giftedness* has changed through decades of research originally begun by these pioneers. We now know that giftedness is present in children from all socioeconomic backgrounds, ethnicities, and genders (Reis & Renzulli, 2009) and characteristics can be exhibited very early in life (i.e. 2-3 years old). We also now understand that gifted students have unique characteristics along with academic and social-emotional needs that require a responsive educational experience that meets those different needs.

In today's school setting, *gifted* typically refers to a child who has a higher than average general intelligence or IQ (Davis, 2006). Intelligence can be estimated by scores from intelligence testing with the mean (i.e. average) of a typical person's IQ is 100 and a standard deviation of 15 points. By contrast, some gifted learners can have an IQ as high as 200 (i.e. over six standard deviations above the mean) (Davis, 2006). Historically, a child with an IQ of 130 (i.e. two standard deviations above the mean) or higher was considered to be gifted. Today some states define gifted as being above a specific IQ score (Davis, 2006), while other states consider a student gifted with an IQ score at or above the 90<sup>th</sup> percentile (Foley-Nicpon, Assouline, & Fosenburg, 2015). However, it



should be noted that within all states that provide gifted programs, high IQ or being in the 90<sup>th</sup> percentile is only one of the requirements in the identification process.

### **General Characteristics of Gifted Learners**

Gifted students often have abilities, interests, and needs that are quite different from other students. Characteristics commonly used to describe gifted learners are presented in Table 3 and include early language skills and reading ability, strong verbal ability and memory skills, high curiosity levels, longer attention span, and inquisitiveness to name a few (Davis, 2006; Johnsen 2004; Tannenbaum, 1983). Gifted students frequently have an intense desire or interest in certain areas and think abstractly earlier than their typically developing peers (Manning, 2006). Nevertheless, being gifted does not mean a child is smart in every area, nor does it mean a child can easily make or keep friends, or even perform in exemplary ways in academic areas. More often than not, gifted learners do not behave in the classroom in ways that most people perceive “bright” students to behave. This frequently means a student who acts as if they know all the answers in class, is regularly highly engaged in learning, works hard to make good grades, pays attention in class, and enjoys same-age peer interactions (NAGC, n.d.-b).

Occasionally, some gifted characteristics can contribute to these students being viewed as a problem student, particularly in the GE classroom. These characteristics include a tendency to be impatient with others, resistant to following directions, asking an abundance of questions, and frustration in repetitive activities or classroom drills (Brody, 2015). Gifted learners are present in all ethnicities, cultures, genders, and socioeconomic groups (Reis & Renzulli, 2009). In addition to the characteristics mentioned prior, diverse gifted learners are considered to be highly verbal and energetic, and more animated and

expressive than their gifted peers. Diverse gifted learners are often more resilient and advanced situational problem-solvers partially due to their experiences with prejudice in both their school and their community (Plucker & Peters, 2018). As a result, diverse gifted learners perceive teachers to have lower expectations for them contributing to a negative school image often held by these students.

**Table 3**

*Common Characteristics of Gifted Learners*

<u>Characteristics</u>	
<ul style="list-style-type: none"> <li>• Prefers company of older students, adults</li> <li>• Superior reasoning and problem-solving skills</li> <li>• Imaginative, creative</li> <li>• Often self-taught, rapid learner</li> <li>• Keen observation</li> <li>• Advanced interests for their age</li> <li>• Strong sense of humor</li> </ul>	<ul style="list-style-type: none"> <li>• Aware of social injustices, societal problems</li> <li>• High levels of concentration, memory</li> <li>• Early and enthusiastic reader</li> <li>• Excellent memorization skills</li> <li>• Greater levels of self-awareness</li> <li>• Advanced written and verbal skills</li> <li>• Rapid development of language skills</li> </ul>

**Social-Emotional Vulnerabilities**

Gifted students can experience vastly different lives specifically, regarding their academic and social-emotional needs (Cross, 2017). Furthermore, gifted students may also experience anxiety issues, eating disorders, perfectionism, underachievement, and social isolation (Cross, 2017) among other things. Even though gifted children display greater maturity levels in some domains, some research (Robinson, 2002) shows gifted

children are more emotionally mature than other children of the same age while still, other research notes that some gifted learners can be more mature than their age and less mature than what is expected for their age (Tomlinson, 2005). In conjunction with differences in academic levels, gifted learners can have asynchronous development resulting in large disparities between their intellectual abilities (i.e. mental age) and their physical abilities (i.e. chronological age). The higher the IQ of the child the more acute asynchronous development can be (Hollingworth, 1942). The impacts of asynchronous development can make life extremely challenging for gifted children. “To have the intelligence of an adult and the emotions of a child combined in a childish body is to encounter certain difficulties” (Hollingworth, 1942, p. 282).

Gifted children are predisposed to a variety of vulnerabilities that can include but are not limited to eating disorders, increased drop-out rates, suicide, and an increased fear of failure. These vulnerabilities are presented in Table 4. As with many children growing up in today’s society, gifted learners are vulnerable to loneliness and isolation which have been linked to depression and anxiety (Johnsen, 2004). They are also susceptible to what Dabrowski (1967) categorized as overexcitabilities or a heightened sensitivity in the specific areas of (a) psychomotor (e.g. extreme restlessness, energy, or drive); (b) sensual (e.g. buzzing of fluorescent lights); (c) intellectual (e.g. high levels of concentration for prolonged periods of time); (d) imaginal (e.g. creates own language); and (e) emotional (e.g. extreme concern with death and God). The intensive nature of overexcitabilities is thought to be unique to highly gifted students (i.e. IQ of 145-159) (Davis, 2006). In addition, unhealthy forms of perfectionism are a common issue facing gifted learners resulting in their setting unrealistic performance expectations. Moreover,

perfectionism has also been found to contribute to underachievement in gifted learners (Schuler, 2002) which can have a devastating long-term impact on academic achievement.

**Table 4**

*Vulnerabilities of Gifted Learners*

<u>Vulnerabilities</u>	
• Emotional intensity and heighten sensitivity	• Heightened sensitivity to social feedback
• Underachievement	• Social isolation, loner
• Perfectionism	• Suicide
• Eating disorders	• Fear of failure
• Anxiety, depression issues	• Increased drop-out rates

**Underachievement**

Baker, Bridger, and Evans (1998) defined underachievement as failing to perform academically at a level proportionate to their measured potential. Based on Berger's (2013) research, it appears that underachieving students as a whole are at a high risk of becoming a drop-out in middle or high school and/or not being successful in college or their future careers. Further analysis from Berger's study suggests underachieving gifted students lack self-regulated learning strategies that may appear as reduced effort and persistence (Berger, 2013). In addition, this group of students also report lower satisfaction with school and their teachers along with a lower perceived value of education (Baslanti & McCoach, 2006). A study by Reis and McCoach (2002) indicates that underachievement in gifted learners can result from being exposed to an environment where gifted learners are habitually under-challenged. Consequently, one of the greatest

threats to gifted learners' psychological well-being appears to be the imbalance between their educational curriculum and their intellectual needs (Cross, 2017).

### **Educating Gifted Learners**

According to the existing literature (Maker & Schiever, 2005; VanTassel-Baska, 1994; VanTassel-Baska & Johnsen, 2007), there are specific instructional strategies that are highly successful and should be used when educating gifted learners. As with all children, gifted learners are not only different from each other as well as their typically developing peers, but they also come with a wide range of skill sets and needs. The consensus view regarding educating gifted students supports the idea that the one-size-fits-all approach is not effective and does not allow for continual academic and social-emotional growth (Kondor, 2007; Roberts & Inman, 2015). Conversely, “successfully meeting gifted students’ needs is contingent upon regular education teachers embracing the belief that gifted students require educational experiences in the regular classroom that focus on their unique cognitive and affective learning needs” (Daugherty, 2010, p. 16).

### **K-6 Elementary Teacher Preparation Standards**

Since 1977, the Council for the Accreditation of Educator Preparation (CAEP) has had the responsibility for providing accreditation to teacher education programs at universities around the U.S. Multiple standards have been developed to identify competency areas for teacher candidates regarding educating gifted learners. The CAEP (2018) *Education Teacher Preparation Standards* (ETPS) requires that during their program, teacher candidates will develop proficiencies for working with students with exceptionalities (i.e. gifted, students with disabilities). The matrix of teacher preparation

standards and alignment between CAEP, ETPS, and NAGC-CEC are presented in Table 5. In most areas of focus, standards overlap reflecting that teacher education programs understand the need and importance of educating future teachers on best practices with gifted learners. Standards outline that candidates must learn about exceptionalities and the impact this has on student learning. As part of educating teacher candidates, many universities also requiring field experiences that provide opportunities to work with students with exceptionalities (i.e. gifted, students with disabilities) in an actual classroom. Unfortunately, with no distinction between these student groups and it is unclear if higher education faculty provide teacher candidates with *equal* learning opportunities for both groups of students.

**Table 5**

*Matrix Aligning CAEP Standards, ETPS, and NAGC-CEC Standards*

Area of Focus	<u>Standards</u>		
	CAEP (2018)	ETPS	NAGC- CEC (2013)
Learner Development and Individual Learning Differences	1.4	1.a - 1.c	1.1; 1.2
Learner Environment	1.4	2.a - 2.d	2.1 - 2.4
Curricular Content Knowledge	3.4; 3.5		3.1 - 3.3
Assessment	1.2b; 1.3; 2.3; 4.1	3.a - 3.f; 4.d	4.1 - 4.5
Instructional Planning and Strategies	1.5; 3.4; 4.2	4.a - 4.c; 4.f; 4.g	5.1 - 5.5
Professional Learning and Ethical Practice	1.1; 1.2a; 3.3; 3.6; 4.2	5.a - 5.c	6.2 - 6.5
Collaboration			7.1 - 7.3

## Teachers of the Gifted Preparation Standards

For preservice and in-service teachers seeking guidance in the GE setting, the original standards established by NAGC continue to serve as a benchmark for elements that should be addressed when educating gifted learners (NAGC, 2008). Whereas, the NAGC-CEC (2013) *Teacher Preparation Standards in Gifted and Talented Education* were created for those preservice and in-service teachers looking for certification or endorsement in gifted education. Both documents require teachers to utilize evidence-based instructional strategies to advance the learning of gifted students.

NAGC's *PreK-Grade 12 Gifted Programming Standards* (2010) were created primarily for teachers in a PreK-12 classroom who work with gifted learners and once again reinforce using evidence-based practices in the classroom. These standards have six focus areas (a) learning and development, (b) assessment, (c) curriculum planning and instruction, (d) learning environments, (e) programming, and (f) professional development. The Mississippi Department of Education *Standards for the Gifted Education Program* (2013) was modeled after NAGC's (2010) *PreK-Grade 12 Gifted Programming Standards* with one of the seven sections of the Mississippi Standards providing essential guidance on the appropriate curriculum and instruction strategies for gifted learners:

1. The local gifted education program shall provide a qualitatively different educational experience in addition to and different from the regular program of instruction.
2. Differentiated curriculum shall be provided for identified gifted students.

3. The local district shall provide opportunities for high ability learners that include grade acceleration, subject acceleration, curriculum compacting, mentorships, and/or dual enrollment.
4. The program of instruction provided to gifted students shall be based on the mastery of the MDR gifted education outcomes.
5. Career exploration and life skills shall be an integral part of the differentiated program of instruction for all gifted students.

Nevertheless the *National Surveys of Gifted Programs Executive Summary* (Callahan et al., 2014) reported findings that within current gifted programs across the U.S., the NAGC Programming Standards “are used in less than half of the districts; one fourth of respondents at the elementary level and one third at the middle school level indicated that their gifted program had no specific curricular materials that guided program activities” (Callahan et al., 2014, p. 10). Moreover, NAGC Programming Standards were designed to provide teachers with a foundation for curriculum planning and instruction (Callahan et al., 2014) for use in educating gifted learners. These findings imply that gifted learners often are *not* receiving the level of instruction needed within their gifted program; therefore, if differentiation is not occurring within the GE classroom, these students’ academic needs are in jeopardy.

### **Differentiated Instructional Strategies**

NAGC (2010) PreK-Grade 12 Gifted Programming Standards also identifies the need for differentiated instruction for gifted learners particularly by using specific strategies to enhance students’ learning experiences. These recommended differentiated strategies are defined in many studies as *curriculum modification* (VanTassel-Baska,



1994; VanTassel-Baska & Stambaugh, 2005), *acceleration* or accelerated learning opportunities (Gagne, 2007; Hong, Greene & Higgins, 2006; Kulik & Kulik, 1992), *enrichment* (Renzulli & Reis, 2003; VanTassel & Johnsen, 2007), *flexible grouping* (Plucker, Burroughs, & Song, 2010; Rogers, 2006; Renzulli & Reis, 2014) and *curriculum compacting* (Karnes & Bean, 2014; Reis, Burns, & Renzulli, 1992; Reis & Renzulli, 2004). Examples of recommended differentiated activities for gifted learners are presented in Table 6. Based on existing literature, it appears that all teachers can be successful at meeting gifted learners' academic needs by using these types of differentiated instruction (Betts, 2004; Lawrence-Brown, 2004; VanTassel-Baska & Johnsen, 2007). As such, "when (GE) teachers promote gifted students' development through effective techniques and strategies, true classroom effectiveness is achieved" (Daugherty, 2010, p. 1). Instructional strategies such as these are recognized as not only helping gifted learners academically but also assist in developing their social-emotional skills such as self-awareness, self-concept, and self-esteem (NAGC, 1998). Social-emotional skills are frequently lacking in gifted learners due to their asynchronous development and can be deficit in greater margins in diverse gifted learners.

The current study utilized a questionnaire, the *Survey of Practices with Students of Varying Needs* (Tomlinson et al., 1995) which looks at teachers' attitudes toward using specific activities, practices, and instructional strategies in the GE classroom. The questionnaire asks teachers to select which ones they would use with gifted students, average students, and students with special needs. Of the 14 instructional practices listed, 11 are evidence-based practices recommended as differentiation options for the gifted learner in both heterogeneous and homogeneous settings.

**Table 6***NAGC Standards, Differentiated Instruction Strategies, and Example Activities*

<b>NAGC PreK-12 Programming Standards</b>	<b>Differentiated Instructional Strategies</b>	<b>Examples of Differentiated Activities</b>
5.6.1 Educators create policies and procedures to guide and sustain all components of the program, including assessment, identification, and acceleration practices.	Acceleration, accelerated learning	<ul style="list-style-type: none"> <li>• Early admission K-12</li> <li>• Grade-skipping</li> <li>• Subject skipping</li> <li>• College courses</li> <li>• Early college admission</li> </ul>
5.1.2 Educators regularly use enrichment options to extend and deepen learning opportunities within and outside of the school setting.	Enrichment	<ul style="list-style-type: none"> <li>• Higher order thinking activities</li> <li>• College programs</li> <li>• Mentorships; internships</li> <li>• Competitions; debate club</li> <li>• School projects; field trips</li> <li>• Interest/talent-based activities</li> <li>• Independent study</li> <li>• Learning centers</li> <li>• Problem-solving learning</li> <li>• Individualized instruction</li> <li>• Inquiry-based learning</li> <li>• Cooperative learning</li> <li>• Creativity enhanced learning</li> </ul>

Table 6 (Continued)

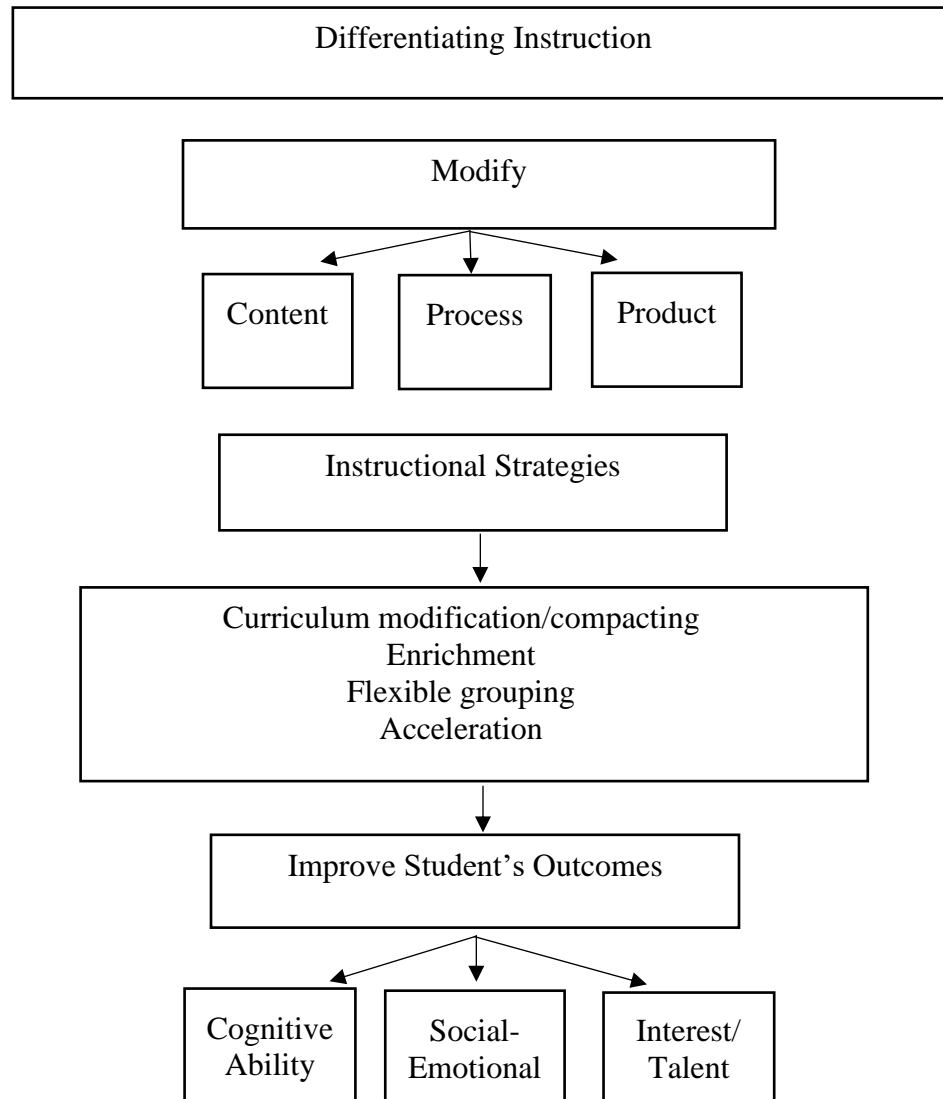
<b>NAGC PreK-12 Programming Standards</b>	<b>Differentiated Instructional Strategies</b>	<b>Examples of Differentiated Activities</b>
5.1.3 Educators regularly use multiple forms of grouping, including clusters, resource rooms, special classes, or special schools.	Flexible grouping	<ul style="list-style-type: none"> <li>• Cluster grouping</li> <li>• Ability grouping</li> <li>• Performance-based grouping</li> <li>• Within-class grouping</li> <li>• Between-class grouping</li> <li>• Interest-based grouping</li> </ul>
2.2.4 Educators have knowledge of student exceptionalities and collect assessment data while adjusting curriculum and instruction to learn about each student's development level and aptitude for learning.	Curriculum compacting or modification	<ul style="list-style-type: none"> <li>• Removing known material and replacing with new content</li> <li>• Adding to curriculum for more in-depth learning</li> <li>• Interdisciplinary opportunities</li> </ul>

Research studies related to instructional strategies for gifted learners typically focus solely on differentiation and to its influence on teacher perceptions (Kilgore, 2018; Szmanski & Shaff, 2013), teacher attitude (Allen, 2017; David, 2011; Geake & Gross, 2008; McCoach & Siegle, 2007; Troxclair, 2013) and its effect on reading instruction (Reis et al., 2004). In his article, Gallagher (2000) reminded us that GE teachers must differentiate instruction for gifted learners specifically to provide students with advanced content (what is taught), process (how students make sense of the information), and product (what students learned) which results in a noticeable difference not only the

instructional strategies that are used to educate this population but also the method that these students demonstrate their learning or mastery of a given topic (see Figure 1).

**Figure 1**

*Differentiation of Instruction for Gifted Learners*



Teachers need to understand that curriculum modifications are necessary for gifted learners as the current education curriculum used by most schools is designed for the average or below average learner. Conversely, characteristics described earlier in this chapter reflect that gifted learners are typically more advanced than their peers and often begin the school year with a basic knowledge of a majority of the skills they are expected to learn for the year (NAGC, 2008). As a result, modifications to the content taught to these students as well as the instructional strategies teachers use to assist them in learning this content along with methods students use to exhibit what they have learned requires teachers to differentiate instruction as a way of meeting their academic needs. Research has shown that the use of modification and recommended strategies with gifted learners results in improvements in student outcomes.

### **Barriers to Differentiation**

A closer look at other studies related to differentiation shows that differentiation does not automatically occur within the GE classroom (Hughes & Murawski, 2001) and that highly effective differentiation has to be done intentionally by modifying curriculum based on information gathered and not just on a whim (Roberts & Inman, 2015). Unfortunately, this can further increase the expectations on already overloaded GE teachers. We know that today's GE teachers are under increased pressure due to mounting responsibilities placed on them from budgetary cuts, inclusion mandates, limits on gifted programming, and increasing culturally and linguistically diverse learners and students with disabilities (Daugherty, 2010). Consequently, time is a major consideration for a GE teacher when planning and implementing differentiation components in the classroom as well as a teacher's knowledge and self-efficacy. A GE teacher with limited

knowledge about educating gifted learners or reduced self-efficacy (i.e. confidence) could easily feel overwhelmed by this task and, as a result, continue to use their existing classroom practices and strategies that are most familiar to them (Bianco & Leech, 2010).

In a study designed to better understand the relationship between the impact of professional development in gifted education and teachers' classroom practices, Peters and Jolly (2018) surveyed preservice teachers in Australia who received one of three different types of gifted education training (i.e. no training, 16-contact hour mini-program, 48-contact hour program specializing in gifted education). Findings suggest that there were no significant differences between the groups of preservice teachers regarding the frequency in using differentiated instructional practices as recommended for gifted learners.

One of the areas that the Javits Gifted and Talented Students Education Act provides funding to is for research related to gifted education carried out by The National Research Center on the Gifted and Talented (NRCG/T). One of the first studies (Archambault et al., 1993) to measure GE teacher instructional strategies or differentiation for gifted learners quantitatively was conducted by researchers associated with NRCG/T. Archambault and colleagues surveyed over 7,000 3<sup>rd</sup> and 4<sup>th</sup> grade teachers throughout the U.S. to determine the extent to which differentiation was occurring in GE classrooms for gifted learners. Results from this study found that regarding using instructional strategies, only minimal modifications and differentiation were occurring in the GE classroom regardless of the participant's location across the country or the student population of their school.

The study by Westberg and Daoust's (2003) was a replication of Archambault and colleagues' study examining whether GE teachers' classroom practices had changed since the original study was conducted a decade earlier. However, the replication study was conducted on a much smaller scale with researchers surveying 1,366 GE in-service teachers from only two states, one Southeastern and one Midwestern, instead of the entire country. Analyses reported a statistically no significant difference with teachers who had received training in gifted education providing the same frequency of differentiation and instructional modifications as the original study by Archambault et al. (1993).

### **Factors Which Influence Teachers**

Some literature (Berman et al., 2012; Szymanski & Shaff, 2013; Troxclair, 2013) related to educating gifted learners in the GE setting has centered on examining the link between GE teachers' lack of training in gifted education as other researchers have focused on the teacher misconceptions and bias toward gifted education and giftedness. These factors are believed to associate with the way GE teachers' view and even treat gifted learners. In a more recent study related to teachers' perceptions of high achieving students, Baudson and Preckel (2013) concluded that "teachers implicit personality theories about gifted students confirms empirical findings on the students' intellectual strength yet hold beliefs that are inconsistent with empirical evidence on social and emotional aspects" (p. 43). The study revealed that frequently teachers have underlying preconceived ideas along and incorrect assumptions of gifted students regarding their intelligence and their social-emotional development. Baudson and her colleague further note that although implicit personality theories are integrated into a person's body of knowledge, training can positively impact those existing theories held by teachers.

Pedersen (1965) along with Baudson and Preckel (2013) suggest that there appears to be a connection between implicit personality theories held by a person and their attitude toward something they have limited knowledge of (i.e. gifted learners).

Current research supports the idea that training for GE teachers at the preservice level significantly impacts GE teachers' attitudes towards gifted learners (Bianco & Leech, 2010; Geake & Gross, 2008; Troxclair, 2013). Research shows that when GE teachers receive training in gifted education, they were more easily able to identify gifted students than those GE teachers without this training (Bianco & Leech, 2010; Rizza & Morrison, 2003). Moreover, the literature (Bangel et al., 2010; Scott, 2008) demonstrates that training increased teachers' self-efficacy in teaching gifted students and also provided them with a deeper understanding of instructional strategies.

### **Misconceptions**

Since gifted learners typically spend the majority of their school day in the GE setting, it should be expected that GE teachers would make an effort to use appropriate instructional strategies as outlined by national organizations in gifted education (NAGC 1998; NAGC, 2010; NAGC-CEC, 2013) to promote an engaging and challenging learning environment for these students. However, many GE teachers perceive gifted learners to have the same academic needs as their typically developing peers (Berman et al., 2012). Furthermore, additional literature on this topic shows that some GE teachers hold the belief that gifted learners can succeed academically by themselves (Pfeiffer & Stocking, 2000; Sueker, 2011) with minimal assistance from the teacher. These findings should not be considered surprising given that most GE teachers have received little or no additional training in gifted education (Archambault et al., 1993; Berman et al., 2012;



Szymanski & Shaff, 2013; Westberg & Daoust, 2003) which may change existing misconceptions. Unfortunately, to the detriment of students, many GE teachers lack basic knowledge about gifted learner characteristics, their specific social-emotional vulnerabilities, or which instructional strategies to use with gifted learners further forcing teachers to rely on their implicit personality theories.

According to some literature (Carman, 2011), preservice GE teachers may have more misconceptions about gifted learners than in-service GE teachers. Berman et al. (2012) examined preservice GE teachers' preconceived beliefs specifically looking at some of the beliefs held by these teachers regarding gifted learners and whether or not gifted education training changed their perceptions. In this qualitative study, participants completed a questionnaire created by the researchers before and after receiving a course on teaching gifted learners as part of their GE teacher program. The pre-course questionnaire responses reflected a relatively typical view from GE teachers with little or no knowledge of gifted learners or understanding of gifted education's purpose. The most frequent responses from participants included misconceptions about all gifted learners in general such as "they get good grades" and "they complete all tasks and assignments on time". Additional responses to questions related to whether gifted learners need GE teachers trained in gifted education was even more revealing. The most frequent responses for this question included no "because all kids are gifted or talented at something" and "because we need to focus on helping struggling kids." Participants' responses also included a common misconception about gifted learners and their education which is "they will get it on their own." Although the post-course questionnaire found overall positive changes in many participants' responses, the analysis also shows

that preservice GE teachers still viewed gifted learners as “nothing more than peer-tutoring candidates who are ahead of the game” (Berman et al., 2012, p. 24). This study suggests that despite receiving training on gifted education, GE teachers’ can still have existing inaccurate perceptions about gifted learners that influence their classroom practices.

### **Attitudes**

As stated by Stern and Keislar (1975), attitude comprises a person’s feelings and their cognitive beliefs about or toward something or someone, along with the behaviors they display in response to those feelings and beliefs. Additionally, Carman (2011) reported findings that imply both preservice and in-service teachers hold negative attitudes and stereotypical views of gifted learners. As part of a study examining K-12 students’ perceptions of their educational environments (i.e. gifted pullout, GE classroom), Adams-Byers, Whitsell, and Moon (2004) also investigated how in-service teacher attitudes were viewed by the gifted learners in their classrooms. Findings show the majority of student participants (75%) viewed both types of learning environments as having positive benefits for them. Conversely, most student participants (75%) also considered the heterogeneous setting in a GE classroom to be less challenging and academically. Additional findings show the negative aspects of the GE classroom centered around teacher intolerance, teasing from classmates, and frequent feelings related to frustration or boredom. One of the most informative findings was that students’ perceived stereotyping of giftedness and gifted learners by the teacher due to negative perceptions and/or negative attitudes as one of the most adverse parts of being gifted. These findings were echoed by Berlin (2009) which also found K-12 students perceived

stereotyping and negative attitudes as the downside of being gifted. Wilson (2006) went further to connect students' perceptions of teachers' attitudes toward gifted learners in predicting student motivation levels, academic achievement, and overall feeling about the education process in general. This draws attention to the idea that teachers' attitudes impact more than just their relationships with students.

Conversely, Sumreungwong (2003) found that preservice teachers' attitudes toward gifted students were not affected in either a positive or negative way by their own knowledge of gifted children or previous experiences with gifted children. Research shows that GE teachers with negative attitudes toward giftedness are more unlikely than those with positive attitudes to enroll voluntarily in professional development courses related to learning about gifted education (David, 2011; Eyre & Geake, 2002; Geake & Gross, 2008). Consequently, negative perceptions or attitudes towards gifted learners results in GE teachers not receiving training that could improve their pedagogy and resulting in teachers continuing their reliance on these inaccurate preconceived ideas, misconceptions, and bias when making decisions related to gifted learners and their needs.

However, McCoach and Siegle's (2007) study contradicts the assumption that training results in optimization in learning for gifted learners in the GE setting. These researchers explored what predicts teachers' attitudes about gifted learners and found that training increased in-service GE teachers' knowledge of giftedness but did not translate into improvements in the classroom for students nor did training improve GE teachers' attitudes towards gifted students for a variety of reasons. McCoach and her colleague concluded that although training increases understanding about student needs additional

emphasis is needed to help teachers support those needs in the classroom.

A study conducted by Troxclair (2013) attempted to measure preservice GE teachers' attitude toward giftedness before they received gifted education in their third year of a teacher education program. This study reported comparable findings to an earlier study (Allodi & Rydelius, 2008) which examined the attitudes of preservice teachers' attitudes enrolled in a special education program in Sweden. Although the findings show participants had an overall positive attitude toward supporting gifted learners' needs, they had a somewhat negative attitude toward the differentiation strategies of acceleration and flexible grouping.

Similar findings were found with in-service teachers as participants in Lassig's (2003) study that was conducted in Australia in response to an Australian Senate Committee's report which brought attention to predominantly negative attitudes toward giftedness across their education system. The study examined possible differences in attitudes toward gifted learners of in-service teachers from a variety of school districts. Findings in this study also show that in-service teachers had a positive attitude toward gifted learners but a negative attitude regarding using recommended instructional strategies such as acceleration, flexible grouping, and ability grouping students.

A plethora of previous research exists (Copenhaver & McIntyre, 1992; Feldhusen, Haeger, & Pellegrino, 1989; Korynta, 1982) showing an improvement in in-service teachers' attitudes towards giftedness and gifted students after attending professional development courses focusing specifically related to the characteristics and gifted learners' needs. Geake and Gross (2008) attempted to quantitatively measure in-service GE teachers from England, Scotland, and Australia feelings towards gifted learners.

Findings indicate that before receiving a professional development course focused on the characteristics and gifted learners' needs, GE teachers' attitudes reflect their feeling that gifted learners are more anti-social (i.e. insensitive, disrespectful) than students who excel in other areas such as athletics or music even though both groups of students displayed the same traits. However, after receiving the professional development course, participants were found to exhibit more positive and accepting attitudes toward gifted learners than they had been before training. A study by McCuller (2011) examined preservice teacher attitudes toward gifted learners instead of in-service teachers and had similar results. McCuller concluded that preservice teachers' attitudes towards giftedness and gifted learners were different (i.e. positive) after receiving professional development.

### **Self-efficacy**

Existing literature reflects that GE teachers' knowledge directly influences their view of gifted education and therefore, results in quantifiable or measurable differences within the classroom (Berlin, 2009; Copenhaver & McIntyre, 1992; Feldhusen, 1994; Hanninen, 1988). On these grounds, one can argue that the lack of pedagogical skills impedes GE teachers from differentiating instruction and creating the optimal learning environment for gifted learners (VanTassel-Baska & Stambaugh, 2005). This underlying argument increases support for the idea that preservice GE teachers and in-service GE teachers often times do not have the necessary training to teach gifted learners (Archambault et al., 1993; Westberg & Daoust, 2003; Whitton, 1997) by no fault of their own resulting in the inability to differentiate for students at their level of need.

Current research shows the lack of pre-service training related to gifted education and gifted learners may be a contributing factor to these students not reaching their

academic potential (Gagne, 2007; Matthews & Foster, 2006; VanTassel-Baska, 2006). Conversely, the void from the lack of training is often filled with a teacher's own personal experiences, beliefs, (Bianco & Leech, 2010; Szymanski & Shaff, 2013) misconceptions and biases. Furthermore, Levi, Einav, Raskind, Ziv, and Margalit (2013) found GE teachers with low self-efficacy had reduced confidence in their teaching methods and their ability to teach students who have a variety of ability levels. This results in minimal growth in students' academic ability over time which contributes to increased drop-out rates high school for gifted learners and disenfranchisement with the education process in general. These findings support the idea that GE teachers' self-efficacy related to giftedness and gifted learners shapes the practices used in their classroom and impacts their view of students' academic abilities and educational potential.

A qualitative study by Sears (2016) concentrated on the connection between gifted education training and the increase in in-service GE teachers' self-efficacy. Results from this study found one of the most meaningful parts of receiving training in gifted education for GE teachers was learning about gifted learners' characteristics. The training allowed for GE teachers to become aware that gifted learners, much like their typical peers, have different aspects to their personalities along with unique vulnerabilities that impact both their academic lives and their social-emotional development (i.e. perfectionism, overexcitabilities, underachievement). In addition, GE teachers learned that gifted learners can also be susceptible to not meeting their academic potential, thereby further highlighting the need for using instructional strategies designed to help them reach their academic potential.

Roberson (2016) interviewed a group of in-service teachers with between 10 to 30 years of teaching in a GE classroom. The majority of participants stated training for gifted learners was non-existent during their preservice teaching program and even for many years after starting their teaching careers. Participants felt that after receiving this training they thought all teachers would benefit from more training of this type that would help them learn new research-based and evidence-based practices to better meet the needs of today's students. Today's classrooms must reflect the overall change in our society which can be partially attributed to the increase in students from diverse populations. GE teachers with strong self-efficacy in gifted education that includes understanding the specific needs of gifted learners in underserved populations could increase the number of gifted education referrals for students, the lack of which is seen as a major problem in gifted education nationally (Tenenbaum & Ruck, 2007).

A mixed-methods study conducted by Scott (2008) centered on the gifted education training needs of in-service GE teachers. This study also identified positive implications for teacher self-efficacy resulting from GE teachers receiving training in gifted education. The findings show GE teachers increased their skill level for being able to meet gifted learners' needs after receiving as little as four professional development sessions. Moreover, participants felt more confident in teaching gifted learners in the future. Along with gifted education training, most participants reported they also needed additional support from their school administrators and their colleagues in the form of classroom aids, technical assistance, in addition to more materials and resources for their students in order for them to differentiate at adequate levels for their gifted learners.

### **Related Studies Measuring Teachers' Attitudes**

The purpose of this dissertation was to use quantitative methods in determining whether or not there is a difference in the attitudes, self-efficacy, and the use of differentiation of preservice GE teachers particularly as it pertains to gifted learners. Several prior studies have failed to use reliable and valid instruments to examine teacher attitudes resulting in the development of “homegrown instruments” and “the use of crude and inappropriate analyses” (McCoach & Siegle, 2007, p. 247). Consequently, we do not have a conclusive image of teacher attitudes toward gifted learners and gifted education (McCoach & Siegle, 2007).

### **Instrument**

It is for that reason that the instrument selected for this study was The Survey of Practices with Students of Varying Needs (SOP) (Tomlinson et al., 1995). This instrument was developed by researchers at NRCG/T at the University of Virginia with the objective of assessing teacher attitudes toward academically diverse students and differentiated instruction with questions pertaining to three different groups of students (e.g. special education, average, gifted). As part of the development process, NRCG/T staff conducted a pilot study on the questionnaire. As a result, the questionnaire was determined to have both content and face validity (Tomlinson et al., 1995). The questionnaire consists of four main parts: Part I assesses teacher attitudes toward gifted learners, Part II asks participants to rank the amount of time and attention they feel each group of students' needs, Part III asks participants to identify their confidence level in 5 areas (e.g. identifying, adapting and individualizing instruction, accommodating, and



assessing), and Part IV asks participants to identify which of the 14 instructional strategies they would use for each group of students.

“The first step in any program of examination and reconstruction is to determine what now exists” (Goodlad, 1984, p. 15). Two studies during the period of 2000-2019 utilized this SOP instrument in their attempt to examine teacher attitude and its influence on self-efficacy and use of differentiation and both used an intervention. These studies include a mixed-methods study by Megay-Nespoli (2001) that was published in the journal, *Roeper Review* and a qualitative study by Bangel et al. (2010) that was published in *Gifted Child Quarterly*. These studies will be detailed in this section of the literature review.

### **Mixed Methods Study with Preservice Teachers**

A mixed-methods, experimental study was conducted by Megan-Nespoli (2001) to examine the beliefs and attitudes of preservice teachers towards gifted learners. The participants in this study included preservice teachers (N=64) who were currently enrolled in the student teaching component of their elementary education teacher program. Participants were randomly selected to be placed in one of two three-hour workshops (i.e. intervention). Workshop#1 titled *Differentiation* focused on gifted education components (i.e. characteristics, instructional strategies) whereas Workshop #2 titled *Year One* focused on first-year teacher components (i.e. parent-teacher conferences, classroom management, teacher made assessments). Part of the methods process included interviewing participants using Interview Protocols from NRCG/T. Participants were asked to do several tasks (a) share their attitudes toward gifted learners, (b) describe their confidence level, (c) discuss specific practices or strategies used with gifted learners, and

(d) discuss the role their host teacher plays in helping them to differentiate for students. An additional qualitative component was that preservice teachers were asked to submit six lesson plans used to reveal if differentiation was utilized in the lesson.

The final part of the methods process was administering the SOP questionnaire to participants as both a pre- and post-assessment. In the analysis process, each of the four parts in the SOP was analyzed independently with T-tests being used to analyze data (Parts I-III) and a .01 level of significance for each of these sections. Part I (post-test) reported statistically significant findings for nine of the 14 items. No significant differences were indicated in analysis of Part II. In the analysis of Part III, results indicated significant differences in both groups. For Part IV, .05 was used in the analysis to determine statistical significance. Pearson's chi-square was used to determine if there was a difference between the two groups and instructional strategies selected by each participant. No significant differences were determined as a result. However, statistical significance was found in the post-test for Workshop#1 group. Findings reveal that preservice teachers use of differentiated strategies did change after attending Workshop#1 on differentiation. Conclusions confirm existing research regarding the increase of teachers' awareness, confidence levels, and use of differentiated strategies as it relates to gifted learners after attending training on gifted education.

### **Qualitative Study with Preservice Teachers**

The qualitative study conducted by Bangel et al. (2010) examined the effectiveness of a 9-week intervention on gifted education for preservice teachers. The intervention contained two trainings focused on increasing the understanding gifted learners' needs in preservice teachers. This study was part of a larger study on

professional development in gifted education. Findings from the participants in the original cohort imply that participants understanding of gifted learners (i.e. characteristics, needs) and self-efficacy increased after participating in both an online course and a practicum. As a result of those findings, this study included three cohorts of preservice teachers.

Participants (N=12) were enrolled in an elementary education program and in a gifted education course (i.e. intervention). Participants were required to have completed a minimum of three field experiences after completing the first three blocks of their teacher education program. The intervention for this study was participating in a Saturday enrichment program for gifted learners. This intervention included training on the characteristics and gifted learners' needs and instructional strategies recommended for gifted learners along with participation in a weekly online course.

Data was collected three times from three sources (a) semi-structured interviews that were conducted after the intervention, (b) classroom observations and lesson plans, and (c) responses to SOP questionnaire. Findings show preservice GE teachers perceived an increase in teacher self-efficacy related to the needs and characteristics of gifted students after participating in the training. The fact that the majority of participants acknowledged they had not known that there would be gifted students in their GE classroom gives credence to the need for exposure to gifted education during the preservice or licensure phase of GE teacher education programs.

### **Conclusion**

Kagan (1992) suggested that preservice teacher attitudes were unchangeable while Haberman (1995) contended that teacher behaviors and ideologies are

interconnected, unable to be separated. Haberman also claimed that it is a waste of time for teacher education programs to try to change these existing attitudes as ideologies require more time than programs have. Some simply believe that teachers' attitudes toward gifted learners typically are formed through experience or the lack of experience (Szymanski et al., 2018; Xiang et al., 2011). Others in the education profession argue that attitudes can be changed if preservice teachers have the opportunity to realize the impact their beliefs and attitudes will have in their future role as an educator and that programs provide teacher candidates with "knowledge and information that become part of their cognitive belief system and, in this way, attitude is influenced" (Troxclair, 2013, p. 58). Regardless of whether attitudes can be changed or not, there appears to be a direct correlation between the academic success of gifted students and teacher attitude (Bannister-Tyrrell et al., 2018) through its influence on teacher self-efficacy and their use of appropriate differentiated strategies.

One major objective of teacher education programs is to ensure that the next generation of teachers is prepared to educate our students including those with different academic and social-emotional needs. This study attempted to understand the influence of teacher attitudes, self-efficacy, and use of differentiation might have on preservice teachers' future classroom practices. This literature review reflects that although research efforts typically focus on the actions (i.e. techniques, strategies) of in-service teachers, there is a growing need to expand our understanding of preservice teachers' attitude towards gifted learners and examine the factors that influence teacher practices in the classroom (Bannister-Tyrrell et al., 2018).

This literature review affirms that currently, gaps in the literature exist regarding our understanding of how preservice teachers' attitudes toward gifted learners influence their use of differentiated instructional strategies and furthermore, their overall self-efficacy. Subsequently, we do not know whether preservice teachers have received any training to educate these students are not. To determine if gifted learners have the opportunity to meet their academic potential, the use of differentiation along with teacher attitude toward gifted learners, and teacher self-efficacy needs to be examined.

## CHAPTER III - METHOD

Presented in this chapter are five sections (a) research design, (b) selected population, (c) instrument, (d) procedure, (e) data analysis. The purpose of this study was to investigate preservice teachers' (a) attitudes regarding gifted learners, (b) self-efficacy in teaching gifted learners, and (c) use of differentiated practices in response to meeting the academic needs of gifted learners in the elementary GE classroom.

### **Research Design**

A nonexperimental, descriptive research design was used in this study. The SOP instrument selected for this study was previously used in both mixed methods (Megan-Nespoli, 2001; Tomlinson et al., 1995) and qualitative (Bangel et al., 2010) designs. However, no study has utilized the SOP strictly for gaining a quantitative perspective since its development in the initial pilot study (Tomlinson et al., 1995). This study employed a quantitative approach to answer the following research questions:

- RQ1: Does the stage of the education program make a difference in attitudes toward gifted learners among preservice teachers?
- RQ2: Does the stage of the education program make a difference in self-efficacy (i.e. confidence levels) in educating gifted learners among preservice teachers?
- RQ3: Does the stage of the education program make a difference in the use of differentiation for gifted learners among preservice teachers?
- RQ4: Does a difference exist in the selection of differentiated instructional strategies for gifted learners between preservice teachers in the last semester of a teacher education program compared to preservice teachers in the first, second, and third semesters of a teacher education program combined?

### **Research Hypotheses**

- RH1: Preservice teachers in the last semester (student teaching block) will reflect more positive attitudes towards gifted learners than preservice teachers in other stages of a teacher education program.
- RH2: Preservice teachers in the last semester (student teaching block) will reflect higher levels of self-efficacy towards gifted learners than preservice teachers in other stages of a teacher education program.
- RH3: Preservice teachers in the last semester (student teaching block) will select more differentiated instructional strategies for gifted learners than preservice teachers in other stages of a teacher education program.
- RH4: Preservice teachers in the last semester (student teaching block) will select more differentiated instructional strategies for gifted learners compared to preservice teachers in the other three semesters of a teacher education program combined.

### **Participants**

Convenience sampling was used to gather participants from two Mississippi university teacher education programs resulting in the total number of 204 students who participated in this study. The study participants were undergraduate elementary education students enrolled in a public and private university located within the same region of the state with similar K-6 teacher education programs and student populations. The participants' stage in the teacher education program was identified by instructors who taught the courses. Stages were comprised of students from both university programs. The four stages were defined as, students who were in the teacher education program's (a) introductory block or first semester; (b) intermediate block or second

semester; (c) senior block or third semester; and (d) student teaching block or last semester.

There were no missing data or outliers identified from responses within the demographic section. One university had 38 (19%) participants and the other university had 166 (81%) participants. There were 194 (95%) female participants and 10 (5%) male participants. Students identified in each stage of the teacher education program included students from (a) introductory block ( $n = 43$ , 21%), (b) intermediate block ( $n = 47$ , 23%), (c) senior block ( $n = 37$ , 18%) and (d) student teaching block ( $n = 77$ , 38%). Participants self-reported their ethnicity to be African American ( $n = 13$ , 6%), Latino/Hispanic ( $n = 4$ , 2%), White Non-Hispanic ( $n = 185$ , 91%), and Mixed ( $n = 2$ , 1%). No other demographic information was gathered in this study.

### **Instrumentation**

The SOP was created by the National Research Center on the Gifted and Talented (NRCG/T) to assess teachers' attitudes about students who are academically diverse and their use of differentiated instructional strategies to meet the needs of students (Tomlinson et al., 1995). Originally developed as part of a study conducted by the University of Virginia in 1995, the SOP was designed to reflect evidence-based practices used to meet the needs of gifted learners. As part of the development process, a pilot study was conducted by NRCG/T staff in order to gather feedback on the questionnaire items. Participants in the pilot study included 32 preservice teachers enrolled in an undergraduate teacher education program and 23 in-service teachers enrolled in a graduate-level program. The SOP was found to be reliable with Cronbach's alpha



coefficient for reliability at .76 ( $p < .01$ ) for the 35 items in the test questionnaire and to have both content and face validity in the initial pilot test (Tomlinson et al., 1995).

The demographics section of the SOP was altered to include only questions related to gender, ethnicity, and the teacher education program stage, similar to other studies that previously used the SOP. This modification to the SOP primarily provided clarification of the teacher education program stages and no other changes were made.

The SOP contained several response scales. Part I consisted of 35 questions focused on teacher attitude regarding diverse types of learners as well as their attitude toward differentiation of classroom practices. This questionnaire section used a 5-point Likert scale with possible responses ranging from “strongly agree” to “strongly disagree” as well as “don’t know.” Part II contained only one question that was determined not relevant to this study. Part III of the SOP asked participants to rate their confidence level in completing eight specific tasks related to adapting and individualizing instruction, accommodating, assessing, and identifying academically diverse learners. This section asked participants to rate how they felt on a scale and utilized a 5-item horizontal numeric scale of “no confidence” to “very confident”. In Part IV of the SOP, participants were asked to select which of the 14 techniques, activities, or instructional strategies they would use with diverse learners. For the remainder of this study, we will refer to these as strategies.

### **Data Collection Procedure**

The researcher obtained permission from the Institutional Review Board (Appendix B) to conduct the study in conjunction with obtaining permission from university administrators and faculty at both universities to administer the SOP to

participants. Once approvals were given, the researcher contacted course instructors to schedule the administration of the questionnaire to participants. The course instructors pre-identified which program stage their course was in (a) the introductory block, (b) the intermediate block, (c) the senior block, and (d) the student teaching block. The questionnaire was administered during individual courses at each university.

Prior to administering the face-to-face questionnaire, an oral explanation of the study was presented to both the instructors and students who were present. Students were informed that their participation was completely optional and there was no expectation or requirement to participate. Potential participants were given a copy of the study overview (Appendix C) which contained information regarding the purpose of the study, benefits, potential risks, and how confidentiality was addressed by the researcher. In addition, the study overview also contained the researcher's contact information. Potential participants were informed that their completion of the questionnaire indicated their consent to participate in the study. Following the researcher's presentation, each instructor signed a Witness Verification Form (Appendix D) for that group of participants. Once the instructor and the researcher had left the classroom, those students who decided to participate in the study completed the questionnaire and placed them in an envelope located in the front of the classroom. All questionnaires were then stored in a locked cabinet, data was entered into SPSS, and subsequently stored on a secure computer during the analysis process.

### **Data Entry**

During the data entry process, the researcher addressed several concerns. First, in Part I the researcher designated any "don't know" responses as missing because they

were not considered valid. In addition, some responses in Part I were reverse scored so that desired responses were uniformly valued higher across the 35 items (see Appendix A for a list of items reverse scored in Part I located at the end of the SOP). For example, some responses were coded as a 5 for “strongly agree” and others were 5 for “strongly disagree” depending on the particular item. For Part IV, the researcher scored participant responses as a “1” for selecting each of the 11 recommended gifted education instructional strategies or a “0” for not selecting each of the 11 strategies. Participants received “0” points for selecting each of three other instructional strategies not recommended for use with gifted learners. (Appendix A lists the three non-recommended strategies at the end of the SOP).

### **Data Analysis**

As part of the data analysis for this study, all data were visually inspected for missing values and outliers. In research studies, missing values can result for a variety of reasons. Some of these reasons include (a) participants not choosing to answer questions because of a lack of understanding or knowledge needed to answer the question, (b) participants may have experienced fatigue or lack of motivation and elect not to respond to all questions, (c) participants may have mistakenly not answered a question, (d) “don’t know” responses, and (e) missing values that result from human error during data entry. As a result of the possible role data entry can play, data was checked for entry errors and it was determined that this was not a contributing factor to the missing values within the dataset. To determine if missing values needed to be addressed prior to analysis, missing values were reviewed and found to be below the threshold set by the researcher (< 5%).

As a result, missing values were not included in the data analysis. In addition, there were no multiple-response answers found during the data cleaning process.

Three of the four parts within the SOP were included and analyzed separately in this study. Utilizing the SPSS statistics program, both descriptive statistics along with four separate ANOVAs were conducted to examine teachers' attitudes in Part I of the SOP. Analysis of variance (ANOVA) was selected because it allows for testing differences between three or more groups and is commonly used in studies such as this one where the dependent variables are continuous and the independent variable is categorical (Field, 2018). For research question 1, three subscales were created from the 35 items within Part I to assess teacher attitudes as it relates to (a) *gifted learners*, (b) *remedial learners*, and (c) *differentiation* within classroom practices. Additionally, a total score for all items in Part I was calculated as part of the analysis. Separate univariate ANOVAs were conducted for each of the three subscales as well as the total score to determine if differences exist among preservice teachers within the different stages of their education program.

The analysis for research question 2 utilized the eight items within Part III of the SOP to conduct an ANOVA. The ANOVA was used to determine if the stage of the teacher education program made a difference in teacher self-efficacy toward educating gifted learners. In addition, descriptive statistics were conducted to gather means and standard deviations to explore the differences regarding the eight items within the individual stages of the education program as well as combined across all stages.

To answer both research questions three and four, a final univariate ANOVA was performed. This analysis utilized the 14 strategies listed in Part IV of the SOP. Research

question three examined differences regarding the use of differentiated instructional strategies by preservice teachers. To answer research question four, information gathered in the ANOVA analysis was used to determine if differences existed in preservice teachers' use of differentiation who are in their last semester of an education program (student teaching block) compared to preservice teachers in the other stages of the education program combined. Profile plots for all ANOVAS conducted were used to help answer research questions by examining them for consistency with the results sections for each analysis.

At the conclusion of the data analysis process, all questionnaires collected during this study were destroyed. At the conclusion of the dissertation process, a video summary of results will be sent to each of the classroom instructors to circulate to their students (i.e. participants).

## CHAPTER IV RESULTS

The primary focus of this study was to determine if a difference exists in teacher attitude, self-efficacy, and the use of differentiated strategies depending on preservice teachers' stage of an education program. A second focus was to examine if differences exist in differentiating instruction for gifted learners in preservice teachers who were in their last semester of a teacher education program compared to those in the other three semesters of the program combined. In order to do this, descriptive analyses as well as a series of ANOVAs were conducted to answer the four research questions presented in this study. All ANOVA analyses were found to be statistically significant at the .05 level of significance. Presented in this chapter are details related to participants followed by findings for each of the four research questions.

### Results for Research Question One

For Part I of the SOP, descriptive statistics of the central tendency (i.e. mean) and the variability of the scores (i.e. standard deviation) for each of the four education program stages are presented in Table 7 for each of the three subscales of *gifted learners* (GL), *remedial learners* (RL), and *use of differentiation* (D). In addition, a total score for all items in Part I was calculated in this analysis. Items within each subscale were reverse scored (as described in Chapter 3).

### Descriptive Statistics for Attitudes

The means measuring the most positive attitudes toward *gifted learners* were exhibited by both the senior block ( $M = 2.88$ ;  $SD = 0.30$ ) and the student teaching block ( $M = 3.05$ ;  $SD = 0.26$ ). Conversely, the lowest means measuring the attitudes toward *remedial learners* were also the senior block ( $M = 2.70$ ;  $SD = 0.29$ ) and the student

teaching block ( $M = 2.74$ ;  $SD = 0.26$ ). Scores for the *use of differentiation* subscale had the same means for both the intermediate block ( $M = 2.80$ ;  $SD = 0.21$ ) and the student teaching block ( $M = 2.80$ ;  $SD = 0.22$ ) while a slightly lower mean existed for the Senior block ( $M = 2.76$ ;  $SD = 0.26$ ) and the lowest mean being with the introductory block at ( $M = 2.67$ ;  $SD = 0.24$ ). The student teaching block had the highest *total score* mean ( $M = 2.89$ ;  $SD = 0.18$ ) while the introductory block had the lowest *total score* mean ( $M = 2.75$ ;  $SD = 0.18$ ).

**Table 7**

*Means and Standard Deviations of Preservice Teacher Attitudes*

Preservice Teachers								
	Introductory (n=43)		Intermediate (n=47)		Senior (n=37)		Student Teaching (n=77)	
Subscale	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gifted <sup>a</sup>	2.81	0.25	2.87	0.23	2.88	0.30	3.05	0.26
Remedial <sup>b</sup>	2.82	0.30	2.85	0.30	2.70	0.29	2.74	0.26
Differentiation <sup>c</sup>	2.67	0.24	2.80	0.21	2.76	0.26	2.80	0.22
Total <sup>d</sup>	2.75	0.18	2.83	0.13	2.80	0.22	2.89	0.18

<sup>a</sup>Gifted Learner Subscale: 3, 7, 10, 13, 16, 18, 20, 21, 22, 24, 27, 30, 33, 34

<sup>b</sup>Remedial Learner Subscale: 1, 4, 9, 14, 19, 29

<sup>c</sup>Use of Differentiation Subscale: 2, 5, 6, 8, 11, 12, 15, 17, 23, 25, 26, 28, 31, 32, 35

<sup>d</sup>Total Score: All 35 items

Means indicate that the least positive attitudes were exhibited during the introductory block (first semester). Additionally, these means reveal that desirable attitudes are greater for students at the end of the program due to the highest means for

the total score occurring during the student teaching block (final semester). In three of the four analyses, attitudes slightly decreased during the senior block (third semester) with the exception of the subscale measuring attitudes toward gifted learners.

### **ANOVA Results for Attitudes**

A reliability analysis was conducted for the 35 items in Part I of the SOP calculated during in the initial pilot test for the questionnaire (Tomlinson et al., 1995). Cronbach's alpha indicated the SOP achieved acceptable reliability at .76 ( $p < .01$ ). This reflects that all 35 items were worthy of retention.

For research question 1, four separate univariate ANOVAs were conducted to determine if preservice teachers' attitudes were different according to the stage of a teacher education program. For the first analysis of attitudes toward gifted learners, the assumptions of normality and independence of variable were met. Additionally, the assumption of homogeneity was conducted using Levene's test of equality of error variances and resulted in non-significance,  $p = .204$ . The omnibus test found that statistically significant differences do exist in preservice teachers within stages of an education program,  $F = (3, 200) = 9.943$ ,  $p < .001$ ,  $\omega^2 = .12$ . Since multiple univariate ANOVAs were being conducted, post hoc comparisons were used to reduce familywise error. Post hoc comparisons were conducted to evaluate where the differences occurred among groups using Tukey honestly significant difference (HSD) test. This test revealed three findings with statistically significant results reflecting that student teaching block had significantly higher mean score in positive attitudes towards gifted learners than (a) introductory block,  $p < .001$ ; (b) intermediate block,  $p = .001$ ; and (c) senior block,  $p = .007$ .



The second ANOVA analysis examined attitudes toward remedial learners. Again, the assumptions of normality and independence of variable were met as well as the assumption for homogeneity of variances with Levene's test being non-significant,  $p = .935$ . However, the omnibus test for this analysis did not find statistically significant differences between the stages of the education program,  $F(3, 200) = 2.636, p = .051$  regarding preservice teachers' attitudes toward remedial learners.

For the third ANOVA analysis that focused on teacher attitudes toward differentiation of classroom practices, the assumption of homogeneity was met by having non-significant results from Levene's test,  $p = .145$ . The omnibus test showed that statistically significant differences do exist between stages of the education program regarding teacher attitudes to differentiation,  $F(3, 200) = 3.187, p = .025, \omega^2 = .04$ . Similar to the first ANOVA analysis, the post hoc comparisons used a Tukey HSD test to confirm where the differences occurred between the stages of the teacher education program. This test revealed two findings with statistical significance, with both the student teaching block ( $p = .024$ ) and the intermediate block ( $p = .048$ ) having a significantly higher mean score in positive attitudes towards differentiation than the introductory block.

The fourth ANOVA analysis examined teachers' overall attitude towards the 35 items included in Part I of the SOP. The omnibus test found statistically significant differences between the stages within an education program regarding teacher attitudes,  $F(3, 200) = 6.214, p < .001, \omega^2 = .002$ . The Levene's test ( $p = .020$ ) violated the assumption of homogeneity of variances reflecting a value less than the critical value of .05. Consequently, a Hartley FMax value was calculated with the obtained value of 2.64

being greater than the critical value of 2.61 resulting once again in the violation of homogeneity of variance. Since the violation of homogeneity occurred, the post hoc comparison utilized Games-Howell instead of Tukey HSD. Games-Howell does not require homogeneity of variances and is used in cases of unequal sample sizes. As a result, Games-Howell post hoc test revealed statistically significant results with the student teaching block having a significantly higher mean score in positive attitudes overall than the introductory block,  $p = .001$ . Therefore, findings from both the ANOVA analyses and the descriptive statistics support the hypothesis that preservice teachers during the student teaching block reflect more positive attitudes toward gifted learners than those preservice teachers in the other stages of a teacher education program.

### **Results for Research Question Two**

The goal of research question two was to determine if the stage of the teacher education program made a difference in teacher self-efficacy toward educating gifted learners. In Part III of the SOP, preservice teachers were asked to rate their confidence level from 1 “no confidence” to 5 “very confident” for eight activities related to differentiation for diverse learners. Three items each related to gifted learners ( $M = 10.18$ ;  $SD = 2.30$ ), and remedial learners ( $M = 11.16$ ;  $SD = 2.28$ ), while two items related to differentiation ( $M = 7.32$ ;  $SD = 1.46$ ), in general. Additional descriptive statistics measuring the preservice teachers’ confidence level are presented in Table 8 for the eight activities within Part III.

A reliability analysis was conducted for the eight items in Part III of the SOP. Cronbach’s alpha indicated the SOP achieved acceptable reliability at .85 ( $p < .01$ ). As a result, all eight items were worthy of retention and were included in this analysis.

For the three items related to gifted learners, the introductory block had the highest overall means for (a) *adapting lessons* ( $M = 3.53$ ;  $SD = 0.80$ ), (b) *creating individualizing instruction* ( $M = 3.44$ ;  $SD = 0.93$ ), and (c) *identification of gifted learners* ( $M = 3.83$ ;  $SD = 0.97$ ). Conversely, for the three items relate to remedial learners, the student teaching block had the highest overall means for the same items with (a) *adapting lessons* ( $M = 3.95$ ;  $SD = 0.87$ ), (b) *creating individualizing instruction* ( $M = 3.84$ ;  $SD = 0.86$ ), and (c) *identification of remedial learners* ( $M = 4.10$ ;  $SD = 0.90$ ). Moreover, for the two items related to differentiation the student teaching block had the highest overall means for (a) *accommodating varying ability levels* ( $M = 3.66$ ;  $SD = 0.88$ ) and (b) *assessing where students are and designing appropriate lessons* ( $M = 3.96$ ;  $SD = 0.79$ ).

Examination of the items related to gifted learners, the introductory block (first semester) had the highest overall mean (10.8) of the four program stages. However, the student teaching block had the highest overall mean (11.89) in meeting the needs of remedial learners. For the items related to the use of differentiation, the group with the highest total mean was once again the student teaching block (7.62). Results show that preservice teachers in the advanced stages of their education program, have a lower level of confidence in educating and identifying gifted learners while they have a higher level of confidence regarding remedial learners. Consequently, these results do not support the hypothesis that preservice teachers in the student teaching block had a higher level of self-efficacy than preservice teachers in other stages of a teacher education program.

**Table 8***Mean and Standard Deviations for Preservice Teachers' Confidence with Strategies*

<b>Skill/Group</b>	<b><i>M</i></b>	<b><i>SD</i></b>
<b>Adapting lessons to meet the needs of gifted learners</b>		
Introductory Block	3.53	.80
Intermediate Block	3.43	.81
Senior Block	3.35	.95
Student Teaching Block	3.44	.94
Total	3.44	.88
<b>Adapting lessons to meet the needs of remedial learners</b>		
Introductory Block	3.49	.83
Intermediate Block	3.52	.81
Senior Block	3.54	.95
Student Teaching Block	3.95	.87
Total	3.67	.88
<b>Accommodating varying levels of ability</b>		
Introductory Block	3.62	.95
Intermediate Block	3.56	.81
Senior Block	3.49	.80
Student Teaching Block	3.66	.88
Total	3.60	.86
<b>Assessing where students are and designing lessons</b>		

Table 8 (Continued)

Introductory Block	3.81	.88
Intermediate Block	3.28	.86
Senior Block	3.65	.86
Student Teaching Block	3.96	.79
Total	3.72	.87
<b>Individualizing instruction for gifted learners</b>		
Introductory Block	3.44	.93
Intermediate Block	3.15	.82
Senior Block	3.27	.84
Student Teaching Block	3.26	.88
Total	3.28	.87
<b>Individualizing instruction for remedial learners</b>		
Introductory Block	3.56	.83
Intermediate Block	3.39	.86
Senior Block	3.68	.78
Student Teaching Block	3.84	.86
Total	3.65	.85
<b>Identifying gifted learners</b>		
Introductory Block	3.83	.97
Intermediate Block	3.17	1.04
Senior Block	3.32	.95

Table 8 (Continued)

Student Teaching Block	3.49	1.18
Total	3.46	1.08
<b>Identifying remedial learners</b>		
Introductory Block	3.83	.92
Intermediate Block	3.63	.91
Senior Block	3.51	.96
Student Teaching Block	4.10	.90
Total	3.83	.94

### Results for Research Question Three

In Part IV of the SOP, preservice teachers were asked to select strategies they would use with three groups of students (i.e. gifted, average, special needs). In this analysis, only responses related to gifted learners were analyzed as recommended strategies for average students and students with special needs were not addressed in this study. Of the 14 strategies listed in Part IV of the SOP, 11 are recommended for use with gifted learners and referenced in the literature review section of this study.

#### Descriptive Statistics for Use of Differentiation

Totals for each teacher education stage reflect differences between the means for Introductory block ( $M = 6.44$ ;  $SD = 2.78$ ), the Intermediate block ( $M = 7.78$ ;  $SD = 2.74$ ), the Senior block ( $M = 7.50$ ;  $SD = 2.74$ ), and the Student Teaching block ( $M = 8.53$ ;  $SD = 2.75$ ). Table 9 provides details related to the percentage that each program stage for each of the 11 recommended strategies. The strategy with the lowest percentage of responses

across all stages of the program was *curriculum compacting* in introductory block ( $n = 43$ , 20.9%), intermediate block ( $n = 47$ , 30.4%), senior block ( $n = 37$ , 27.8%), and student teaching block ( $n = 77$ , 32.9%). The strategy with the highest percentage of responses across all program stages was *higher-level thinking activities* with introductory block ( $n = 43$ , 90.7%), intermediate block ( $n = 47$ , 93.5%), senior block ( $n = 37$ , 91.7%), and student teaching block ( $n = 77$ , 92.1%). *Cooperative learning* had the highest increase in percentage of responses from the introductory block ( $n = 43$ , 27.9%) to the student teaching block ( $n = 77$ , 78.9%). To summarize, Table 9 shows preservice teacher response percentages for their beliefs about using 11 recommended instructional strategies for gifted learners.

**Table 9**

*Response Percentages for Recommended Gifted Instructional Strategies (N=11)*

<b>Recommended Gifted Instructional Strategies</b>	<b>Introductory (<math>n = 43</math>)</b>	<b>Intermediate (<math>n = 47</math>)</b>	<b>Senior (<math>n = 37</math>)</b>	<b>Student Teaching (<math>n = 77</math>)</b>
Ability grouping	62.8%	56.5%	61.1%	75.0%
Activities to enhance creativity	81.4%	82.6%	94.4%	93.4%
Cooperative learning	27.9%	54.3%	50.0%	78.9%
Curriculum compacting	20.9%	30.4%	27.8%	32.9%
Higher-level thinking activities	90.7%	93.5%	91.7%	92.1%
Independent study	76.7%	82.6%	86.1%	80.3%
Individual instruction	46.5%	67.4%	58.3%	60.5%

Table 9 (Continued)

Interdisciplinary activities	30.2%	71.7%	41.7%	71.7%
Learning centers	55.8%	76.1%	72.2%	86.8%
Problem-solving activities	72.1%	78.3%	83.3%	90.8%
Projects	79.1%	84.8%	83.3%	92.1%

Equally as important, Table 10 shows preservice teacher response percentages for three instructional strategies not recommended for gifted learners. For two of the strategies (i.e. *drill and practice* and *workbook exercises*), preservice teachers in the student teaching block had a lower mean than those in the introductory block. For example, the *drill and practice* mean for preservice teachers in student teaching was 36.8% while introductory block was 48.8%. Similarly, for *workbook exercises* the mean for preservice teachers who were student teaching was lower (44.7%) than those in the introductory block (53.5%). In contrast, for the *values training* strategy preservice teachers who were student teaching (53.9%) had a higher mean than those in the introductory block (34.9%).

**Table 10**

*Response Percentages for Strategies Not Recommended (N=3)*

<b>Instructional Strategies Not Recommended</b>	<b>Introductory (n =43)</b>	<b>Intermediate (n =47)</b>	<b>Senior (n =37)</b>	<b>Student Teaching (n =77)</b>
Drill and practice	48.8%	34.8%	41.7%	36.8%
Values training	34.9%	39.1%	44.4%	53.9%
Workbook exercises	53.5%	39.2%	47.2%	44.7%



### **ANOVA Results of Use of Differentiation**

A reliability analysis was conducted for the 11 recommended items in Part III of the SOP. Cronbach's alpha indicated the SOP achieved acceptable reliability at .83 ( $p < .01$ ). As a result, all 11 items were retained and included in this analysis.

To answer research question three, a univariate ANOVA was conducted to determine if the stage of a preservice teacher education program had a statistically significant influence on preservice teachers' use of differentiation of instructional strategies for gifted learners. For this analysis, the assumptions of normality and independence of variable were met as well as the assumption of homogeneity with Levene's test resulting in non-significance,  $p = .476$ . The omnibus test found that statistically significant differences do exist in the use of differentiation among the stages within an education program,  $F = (3, 197) = 5.810$ ,  $p < .001$ ,  $\omega^2 = .07$ . The post hoc comparisons using the Tukey HSD test evaluated where the differences occur among stages. The Tukey findings revealed statistically significant results with the Student Teaching block having a significantly higher mean score in their intent to differentiate for gifted learners than and the Introductory block,  $p < .001$ . These results support the hypothesis for this research question in that responses from preservice teachers in the Student Teaching block reflect a higher level of intent to differentiate for gifted learners than those in the other stages of a teacher education program.

### **Results for Research Question Four**

To answer this research question, data collected to answer research question three was used to determine if statistically significant differences exist in the use of differentiation among preservice teachers in their last semester of a teacher education

program compared to those in the other three semesters of the program. For this portion of the analysis, the Helmert contrast revealed statistical significance differences between the student teaching block and the other three stages (introductory, intermediate, and senior blocks) combined,  $p = .001$ . These results support the hypothesis for the research question in that preservice teachers in their last semester report planning to utilize more differentiated instructional strategies for gifted learners in their future classrooms than preservice teachers in the other three semesters of the program combined.

## CHAPTER V - DISCUSSION

This chapter provides a summary of the findings from statistical analyses conducted in this study as well as how these relate to the theoretical framework. Presented in this chapter are (a) conclusions, (b) implications for practice, (c) limitations, and (d) recommendations for future research.

### **Conclusions**

The theoretical lens through which this study was conducted was implicit personality theory. In this study, this theory refers to the preconceived views that teachers have about students which can negatively impact student learning in a variety of ways (Pedersen, 1965). Implicit personality theories can include stereotyping and bias as well as misconceptions influencing teachers' attitudes, self-efficacy, and use of differentiation in their classrooms. Furthermore, implicit personality theories are strong predictors of teachers' future behaviors (Baudson & Preckel, 2013). Research shows that implicit personality theories regarding gifted learners are frequently found in new and inexperienced teachers (Baudson & Preckel, 2013; deWet & Gubbins, 2011). As a result, implicit personality theories can greatly impact not only the quality of learning for gifted learners but also teachers' overall attitude towards students. The intent of this study was to explore preservice teachers' attitudes, self-efficacy, and use of differentiation for gifted learners to determine if implicit personality theories held at the beginning of a teacher education program could be positively impacted as the program progresses.

### **Attitudes**

The goal of research question 1 was to determine if there were differences in preservice teachers' attitudes toward gifted learners within the stages of the teacher

education program. A series of ANOVAs were conducted to analyze preservice teachers' attitudes (a) towards gifted learners, (b) remedial learners, and (c) use of differentiation. A fourth ANOVA was conducted to examine the overall score (i.e. all 35 items for Part I) for preservice teachers in each of the stages of a teacher education program. Three of the analyses found statistical significance among the stages. No statistically significant differences found between the stages of the teacher education program regarding preservice teachers' attitudes toward remedial learners. Regarding attitudes toward gifted learners, statistically significant differences ( $p < .05$ ) were found between preservice teachers in the last semester and preservice teachers in (a) the first semester, (b) second semester, and (c) the third semester. Regarding attitudes towards differentiation, statistically significant differences ( $p < .05$ ) were found between preservice teachers in the first semester and those in (a) the second semester and (b) the last semester. Regarding preservice teachers' attitude overall (i.e. collapsing the three subscales), a statistically significant difference ( $p < .05$ ) was found between preservice teachers in the first semester and those in the last semester of a program.

Results reflect preservice teachers' attitudes toward differentiation is less positive for preservice teachers in their first semester than those in the second semester. Additionally, preservice teacher attitudes toward differentiation were more positive in the advanced stages of the teacher education program signaling that preservice teachers are being exposed to differentiation throughout their coursework. Both examples indicate a more positive attitude for preservice teachers who are student teaching could be partly due to the fact that differentiation has become more widely used and taught in teacher education programs today than it was a decade ago. This study supports other research

that shows an increase in positive teacher attitudes towards gifted learners can indicate training in gifted education (Bangel et al., 2010; Megay-Nespoli, 2001). This study's findings indicate that as preservice teachers progress through their teacher education program their implicit personality theories change and positive attitudes toward gifted learners improve due to their preparation. Specifically, these results imply that preservice teachers' exposure to educating gifted learners increases over the course of their program. However, this does not allow us to know if preservice teachers received adequate levels of training, but a basic understanding could be assumed. Regardless of the extent of training preservice teachers are receiving, Baudson and Preckel (2013) note that positive changes in implicit personality theories result from training in gifted education.

### **Self-Efficacy**

The goal of research question two was to determine if differences exist in preservice teachers' self-efficacy regarding educating gifted learners between the stages of the teacher education program. Descriptive statistics were used to measure preservice teachers' confidence levels regarding eight activities. Findings demonstrate that preservice teachers in the first semester of their program had the highest level of confidence in educating and identifying gifted learners. Whereas, preservice teachers in the last semester of their program had the highest level of confidence in educating and identifying remedial learners. Conversely, preservice teachers in the last semester of their program also had the highest level of confidence in their ability to differentiate instruction for all ability levels. However, preservice teachers across all program stages reflected the lowest confidence levels in their ability to educate and identify gifted learners. Therefore, findings from this study indicate that preservice teachers lack

confidence in educating gifted learners. This may signal that while they may be receiving some training in gifted education, it is not sufficient to adequately prepare them for educating gifted learners in their future classroom (Plucker & Callahan, 2014).

The findings regarding preservice teacher in their first semester could suggest that at the beginning of a teacher education program students are overly confident in their ability resulting in this group having the highest confidence levels. It could also indicate that their implicit personality theories of gifted education and educating gifted learners is based on misconceptions and stereotyping this group of students. For example, it is commonly thought by teachers without training in gifted education that gifted learners often make the best grades and have the fewest behavioral issues (Berman et al. 2012). With that being said, one could understand why novice teachers would be highly confident in their ability to identify and educate these students. These first semester preservice teachers may assume the academic needs of all students to be the same.

The findings regarding preservice teacher in their last semester of a program suggest that at the end of a teacher education program students are the least confident in educating gifted learners. This may result from preservice teachers being exposed to gifted learners during their student teaching practicum for the first time and realizing that they may lack the knowledge of how best to educate this group of students. This makes logical sense in that today's schools have the primary focus of addressing the needs of struggling students while advanced learners' educational needs are less of a priority (Davidson & Davidson, 2004). Much less, if any, time is spent addressing the needs of students who have mastered the curriculum for their grade level (NACG, 2008). Both training as well as practicum experiences in gifted education could help with increasing

self-efficacy levels thereby improving preservice teachers' abilities to identifying and educating gifted learners.

The rationale for why preservice teachers in the last semester of a program have the highest confident levels in differentiating instruction for their students could relate to fact that this group is currently in a classroom and has the opportunity to apply the knowledge acquired during their program. Those student teachers who are presently in the classroom are familiar with differentiation and might be using it on a regular basis. Therefore, it would be understandable for them to feel more confident than those preservice teachers not in classrooms everyday who may still only be thinking of differentiation from a theoretical view or may not understand it fully.

### **Differentiated Instructional Strategies**

The goal of research question three was to determine if differences exist between the stages of the teacher education program in preservice teachers' use of differentiated instructional strategies for gifted learners. Both descriptive statistics and an ANOVA were conducted to analyze preservice teachers' responses of their beliefs about using specific strategies in the classroom with gifted learners. Descriptive statistics reflect that overall mean differences exist between preservice teachers in each of the stages. Results show that preservice teachers in the first semester chose *fewer* recommended strategies for gifted learners than those in the other three semesters. In contrast, preservice teachers in the last semester chose *more* of the recommended strategies for gifted learners than those in the other three semesters of the program. This demonstrates that preservice teachers' intent to differentiate for gifted learners increases as preservice teachers progress through their program. This is instrumental for gifted learners as previous

research has found that differentiated classrooms are more responsive to their academic needs (Tomlinson & Kalbfleisch, 1998).

Regarding the recommended instructional strategies selected by preservice teachers, all 11 strategies were chosen more often in the last semester than in the first semester indicating that preservice teachers' intent to use differentiated strategies with gifted learners improves as they progress through the teacher education program. Furthermore, findings show two non-recommended strategies were chosen less often by preservice teachers in the last semester of their teacher education program. However, specifics regarding the best ways to differentiate instruction for gifted learners may be receiving less attention. This is evident by the low response rate across all stages of the recommended strategy of *curriculum compacting*. These findings could indicate that teacher education programs focus on teaching differentiation during all stages of the education program, but additional education is needed as it relates to preparing preservice teachers to use more recommended gifted education strategies in their future classrooms.

The final analysis in determining if differences exist between the stages of a teacher education program involved conducting an ANOVA. Results found statistically significant differences ( $p < .05$ ) in the response percentages between preservice teachers in the last semester and those preservice teachers in the first semester. Reflecting that those preservice teachers who were in the student teaching stage of a teacher education program responded with a higher level of intent to differentiate instruction for gifted learners than those in the other stages of a teacher education program. This analysis was also used to answer research question four which specifically examined the intent of preservice teachers in their last semester to differentiate instructional strategies for gifted



learners compared to those in the other three semesters combined. Findings reveal statistically significant ( $p < .05$ ) differences between these two groups suggesting that preservice teachers who were currently student teaching plan to differentiate instruction for gifted learners at a higher level than those preservice teachers who have not reached this stage of the program yet. This can have a substantial impact on gifted learners in the GE classroom as differentiated strategies enable gifted learners to have a rigorous and challenging learning experience (NAGC, 2008). This further indicates that preservice teachers' knowledge and experience with meeting the needs of gifted learners were higher for those in their last semester of the teacher education program. This demonstrates that preservice teachers in the student teaching stage have a more positive view of the importance of using differentiated instructional strategies for gifted learners. Additionally, as preservice teachers spend more time actively teaching in a classroom setting implicit personality theories (i.e. misconceptions, negative stereotypes) held by these teachers improve resulting in more positive perceptions of gifted learners.

To summarize, findings in this study show that implicit personality theories held by preservice teachers are positively impacted by the training they receive during a teacher education program. This aligns with existing research (Baudson & Preckel, 2013) that shows novice teachers have misconceptions about gifted learners and how best to meet their academic needs. This study demonstrates that as these preservice teachers progress through their education program they are exposed to gifted learners at some level within coursework, observations, and practicum experiences which impacts their previously held beliefs or perceptions.

However, these training opportunities can also highlight the limited exposure preservice teachers are receiving to gifted education strategies and techniques compared to those they are received in other areas. This results in preservice teachers at the end of their program being highly confident in educating remedial learners as well as their ability to differentiate for most learners but less confident in their ability to identifying and educating gifted learners. Therefore, this study indicates that teacher education programs are providing coursework that may include a limited focus on the needs of gifted learners, but more emphasis is needed to increase self-efficacy of teachers in educating gifted learners.

### **Limitations**

The purpose of this study was to examine preservice teachers' attitudes, self-efficacy, and use of differentiation for gifted learners. This study conducted strictly quantitative analyses. One limitation of this study was that there was no specific information gathered on whether participants had received any type of gifted education training as part of their education program. Changes in attitude, self-efficacy, and use of differentiation with gifted learners could have occurred as a result of receiving training in gifted education during the various stages. Since several recommended instructional strategies were not selected by a majority of preservice teachers this could suggest that specific training regarding the educational needs of gifted learners may not have been provided during any of the teacher education program or was limited in its scope. On the other hand, preservice teachers themselves may have difficulty recalling a variety of instructional strategies due primarily to being new to the terminology or having limited experience with using it. Therefore, knowing whether or not participants had received

training and to what extent would have been helpful in further understanding the differences that exist between the groups.

The sampling method and sample size were also limitations in this study. Convenience sampling limited participants to two universities in the same region of the state with similar student demographics (i.e. ethnicity, socioeconomic status). Convenience sampling is problematic as it can contribute to systematic bias which often stems from sampling bias as a result of underrepresenting or overrepresenting the targeted population. Researcher bias can also exist in the selection of the sample population as the researcher is familiar with the program as a doctoral student. The use of survey research, particularly self-report questionnaires, also allows for the possibility of bias to exist in a research study. These types of instruments contribute to socially desirable bias where participants respond according to what is considered favorable by others and can impact the accuracy of responses. Regarding sample size, both universities had a relatively small undergraduate-level teacher education program resulting in a small sample size for the analyses. Having a larger participant group as well as sampling universities from other state areas with differing student population demographics could have provided more diverse representation of preservice teachers.

### **Recommendations for Future Research**

Future research could include conducting a mixed method study with a similar population. Having both a quantitative and a qualitative component could increase understanding of teacher responses as well as provide extremely useful information in why participants selected their responses. In the current study, several participants wrote in statements on the questionnaire itself indicating personal experiences they had as a

gifted child themselves. Conducting focus groups or interviews with some of the participants from each of the stages of the program could provide further insight into the relationship between gifted learners and general education teachers.

Future studies could also include examining preservice teachers' attitudes toward gifted learners within underserved populations specifically those culturally or ethnically diverse and economically disadvantaged elementary students. Limited research exists regarding this population of students and as our population changes and evolves these students are increasing in numbers in classrooms across the country. Research is needed because these students have unique characteristics different from their gifted peers. As such, there are specific instructional strategies recommended for this group of students which help them to be more successful in the GE classroom. Implicit personality theories regarding diverse gifted learners include the misconception that non-White students cannot be gifted especially if they come from low socioeconomic backgrounds (Moon & Brighton, 2008). Furthermore, many teachers fail to identify giftedness in students who may have limited English proficiency. Further research is needed on this topic as these students often begin their elementary school years academically behind their White peers. This research could provide information on what can be done to help new or novice general education teachers to better meet these students' academic needs.

### **Implications for Practice**

Findings from the current study indicate that preservice teachers may have a basic knowledge of the importance of differentiating instruction for gifted learners but may lack confidence in identifying and educating these students. This is similar to a previous study by Tomlinson and colleagues (1995) that found a direct correlation between

teachers' self-efficacy in the use of instructional strategies and the strategies they use in the classroom. By nature, teachers are going to use the strategies they are most confident in teaching (Tomlinson et al., 1995). Teacher education programs should evaluate how they are preparing preservice teachers to be competent in their understanding all students as this is what the federal law requires (HEOA, 2008). Teacher education programs need to ensure they are incorporating intentional content and practicum experiences that aid preservice teachers' understanding of gifted learners' characteristics, vulnerabilities, and knowledge of effective instructional strategies. This will lead preservice teachers to gain the self-efficacy needed to identify gifted learners and effectively deliver differentiation.

Findings from this study demonstrate that preservice teachers at the beginning of a teacher education program feel highly confident in their ability to educate gifted learners. These high confidence levels could be the result of the preservice teachers' lack of knowledge about the characteristics and academic needs of gifted learners. For example, many teachers without training in gifted education often share the common misconception that these students often make the best grades and have the fewest behavioral issues—both of which are often untrue (Berman et al. 2012).

Conversely, findings from this study reflect that preservice teachers in the last stage of a teacher education program are not as confident in educating gifted learners as those in earlier stages. This may result from these teachers being exposed to gifted learners during their student teaching practicum for the first time and realizing that they may lack the knowledge of how best to educate them. As classroom experience increases, these teachers are faced with the daily requirement of addressing the academic needs of students with a variety of ability levels. Therefore, intentional gifted education training

beginning early in the teacher education program and gradually increasing the opportunities the program provides for preservice teachers to apply that knowledge with gifted learners would be beneficial based on this study's findings. A didactic training where coursework and practicum experiences are linked would provide preservice teachers with the knowledge base needed to effectively plan and implement differentiated instruction for gifted students in the GE classroom.

The findings in this study also showed that preservice teachers across *all* stages of a teacher education program reflected much higher confidence in their ability to identify and educate *remedial* learners than they do for *gifted* learners. This finding supports previous research stating that nationally, preservice teachers spend significant time learning best practices for learners who struggle versus those learners who are gifted (Davidson & Davidson, 2004). In today's teacher education programs, students are learning how to prepare and plan their instruction to meet the needs of students within the lower margins of the class but not necessarily those in the upper margins (NAGC, 2008). Thus, teacher education programs need to prepare preservice teachers to meet the needs of students who are gifted by providing a gifted education course in their program of study. This would more effectively prepare preservice teachers to use evidence-based practices as well as how to prepare appropriate levels of challenge and rigor within the curriculum. With over three million gifted learners in GE classrooms across the country (U.S. Department of Education Office of Civil Rights, 2014), preservice teachers should be prepared to encounter these students in their future classrooms. Not only would this help teachers to effectively meet the needs of students, it also addresses two major areas

of concern which are a lack of teacher training and student underachievement as research has shown that teacher training can have a positive impact on both (NAGC, 2008).

## APPENDIX A - SOP

### Survey of Practices with Students of Varying Needs

1

**This instrument is designed to help us understand teacher attitudes about classrooms, students, and teaching practices. The instrument will take about 15 minutes to complete. Do not put your name on the paper. Please be sure that you see every question on the front and back of both sheets. Thank you for taking time to participate in this study.**

Please indicate the following demographic information about yourself.

**Gender:**

- Male
- Female
- Other: \_\_\_\_\_

**Ethnicity:**

- Asian or Pacific Islander
- Native American
- Latino or Hispanic
- White Non-Hispanic
- African American or Black (Caribbean, West African, etc.)
- Other: \_\_\_\_\_

**Program Status:**

- Introductory Block
- Intermediate Block
- Senior Block
- Student Teaching
- Master's program/M.Ed.
- Other: \_\_\_\_\_

**Part I:**

**Read each statement and circle the response that best describes your feelings about the statement. Circle SA if you strongly agree, A if you agree, D if you disagree, SD if you strongly disagree, and DK if you don't know how you feel about the statement.**

A student who is learning disabled will usually be a low achiever in most subjects.

The regular curriculum will challenge all students if the teacher is interesting and exciting.

Gifted students can make it on their own without teacher direction.

Remedial students find it difficult to work on their own without teacher direction.

It is important to assess students' knowledge about the topic before beginning a new unit.

SA   A   D   SD   DK

SA   A   D   SD   DK

SA   A   D   SD   DK

SA   A   D   SD   DK

SA   A   D   SD   DK



If tests indicate that a student has acquired basic skills, the teacher should omit the regular assignments and modify the curriculum for that student.

SA A D SD DK

Gifted students will take their regular assignments and make them more challenging on their own.

SA A D SD DK

If students have already mastered some of their material before starting a unit, they should be given alternative assignments.

SA A D SD DK

Remedial students may need additional time to practice to master basic skills.

SA A D SD DK

An effective way to identify gifted students is to look for students with the highest grades.

SA A D SD DK

In the classroom, content should be varied to match students' interests and abilities.

SA A D SD DK

To assure that all students have the same knowledge base, it is appropriate to present curriculum information to all students in the same way.

SA A D SD DK

Allowing gifted students to work on assignments that are different from the rest of the students in playing favorites and fostering elitism.

SA A D SD DK

Students who are learning disabled are usually poor readers.

SA A D SD DK

Average students need to spend most of their time working in teacher-directed activities.

SA A D SD DK

Gifted students need longer assignments since they work faster.

SA A D SD DK

It is important for all students to do workbook exercises, review pages, and textbook assignments because these activities are an integral part of the curriculum.

SA A D SD DK

Working too hard in school leads to burn-out in gifted students.

SA A D SD DK

Remedial students do not do well in most subjects.

SA A D SD DK

Learning disabled students who are gifted will need to concentrate their study to remediate their weaknesses so they can go on to use their areas of strength.

SA A D SD DK

Gifted students are easy to identify in the classroom.

SA A D SD DK

Work that is too easy or boring frustrates a gifted child just as work that is too difficult frustrates an average learner.

SA A D SD DK

Assignment length and homework assignments are usually designed to meet the needs of the average learner.

SA A D SD DK

Gifted students should be encouraged to direct their own learning.

SA A D SD DK

Having some students work on different assignments results in unfair grading.

SA A D SD DK

Students who differ markedly in ability level from the average learner should be taught in special classes to fully meet their needs.

SA A D SD DK

Some underachievers are actually gifted students.

SA A D SD DK

While it is appropriate for students to work on different assignments commensurate with their ability levels, the means of assessment should be the same for all students.

SA A D SD DK

Remedial students have difficulty grasping concepts and need a more fact-based curriculum

SA A D SD DK

If a gifted student is doing poorly in spelling, it is necessary to deal with the weakness in spelling before presenting more advanced content in other areas.

SA A D SD DK

All students in the class should take the same test to show mastery of the material in a unit.

SA A D SD DK

Removing special education and gifted students from the classroom for special classes is disruptive to the class schedule.

SA A D SD DK

In teaching gifted students, teachers should modify the content only, since all students need to use the same processes and can generate the same projects.

SA A D SD DK

Having gifted students work on individual projects or assignments isolates them from the rest of the class.

SA A D SD DK

Grouping students is more detrimental than beneficial.

SA A D SD DK

**Part II:**

**In thinking about students in the classroom, please rank the following three groups according to the amount of time and attention each one receives. Place a 1 beside the group receiving most of your attention. Place a 2 beside the next group. Place a 3 beside the group receiving the least amount of attention. If you feel you give equal time to all groups, place an E in each blank.**

Special education students \_\_\_\_\_

Average students \_\_\_\_\_

Gifted students \_\_\_\_\_

**Part III:**

**How confident do you feel about the following? Rate from 1 (no confidence) to 5 (very confident) by circling the response that best describes your feelings:**

Adapting my lessons to meet the needs of gifted learners	1	2	3	4	5
Adapting my lessons to meet the needs of remedial learners	1	2	3	4	5
Accommodating varying levels of ability in my class	1	2	3	4	5
Assessing where students are and designing appropriate lessons	1	2	3	4	5
Individualizing instruction to meet the needs of gifted learners	1	2	3	4	5
Individualizing instruction to meet the needs of remedial learners	1	2	3	4	5
Identifying gifted students	1	2	3	4	5
Identifying remedial students	1	2	3	4	5

**Part IV:**

**Which specific techniques, activities, or instructional strategies do you think you would use with each of the following learners in the classroom? Place a check in the appropriate column. Do not check strategies unfamiliar to you.**

	Gifted Students	Average Students	Special Education Students
Ability grouping			
Activities to enhance creativity			
Cooperative learning			
Curriculum compacting			
Drill and practice			
Higher level thinking activities			
Independent study			
Individual instruction			
Interdisciplinary activities			
Learning centers			
Problem-solving activities			
Projects			
Values training			
Workbook exercises			

Items reverse scored in Part I: a1, a2, a3, a7, a10, a12, a13, a16, a17, a18, a19, a20, a21, a24, a25, a26, a28, a30, a31, a32, a33, a34, a35

Non-recommended strategies for Part IV: Drill and practice; values training; workbook exercises

## APPENDIX B - IRB APPROVAL

### Office of Research Integrity



118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

### NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

The risks to subjects are minimized and reasonable in relation to the anticipated benefits. The selection of subjects is equitable.

Informed consent is adequate and appropriately documented.

Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.

Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.

Appropriate additional safeguards have been included to protect vulnerable subjects.

Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.

The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-19-585

PROJECT TITLE: Examining the Influence of Attitudes, Self-Efficacy, and Differentiation in Educating Gifted Learners

SCHOOL/PROGRAM: School of Education, Curriculum and Instruction

RESEARCHER(S): Marla Freitag, Audra Classen

IRB COMMITTEE ACTION: Approved CATEGORY: Expedited

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research

employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: February 3, 2020

**Donald Sacco, Ph.D.**  
**Institutional Review Board Chairperson**

## APPENDIX C - STUDY OVERVIEW TO PARTICIPANTS



School of Education

118 College Dr. #5057 | Hattiesburg, MS 39406-0001

Phone: 601.266.5810 | Fax: 601.266.4548 | Email: marla.freitag@usm.edu | www.usm.edu

Project Title: Examining the Influence of Attitudes, Self-Efficacy, and Differentiation in Educating Gifted Learners

Principal Investigator: Marla D. Freitag

Phone: 601-287-9002

Email: marla.freitag@usm.edu

Dear Students:

You are invited to take part in a research study about preservice and in-service general education teachers' attitudes, self-efficacy, and use of differentiated instructional practices for gifted learners. Your participation will require approximately 10 minutes and consists of completing a short survey on the topic. There are no known risks associated with the survey being administered; however, the information that you provide will help provide valuable information on how preservice and in-service general education teachers understand and use differentiated practices. Taking part in the study is completely voluntary. Participation is anonymous, and your responses will be kept strictly confidential. Due to efforts to maintain confidentiality of all participants, completion of the survey is your consent to participate in this study and no signed consent form is required. By completing the survey, you are indicating that you are 18 years of age or older, an education program student who intends to teach in the general education setting, and also indicates your consent to participate in this study.

### Study Overview

Purpose: The purpose of this study is to examine preservice and in-service general education teachers' attitudes, self-efficacy, and use of differentiated instructional practices with gifted learners related to their stage in the education program (i.e. introductory block, intermediate block, senior block, student teaching, and graduate program).

Research questions include:

- Does either the stage of the education program or previous gifted training make a difference in attitudes toward gifted learners among preservice teachers and in-service teachers?

- Does either the stage of the education program or previous gifted training make a difference in self-efficacy toward gifted learners among preservice teachers and in-service teachers?
- Does either the stage of the education program or previous gifted training make a difference in differentiation for gifted learners among preservice teachers and in-service teachers?
- What differences exist in the differentiation for gifted learners among preservice teachers in the last year of a teacher education program compared to preservice teachers in either the first year, second year, or third year of a teacher education program?

Currently there are over 3 million gifted learners who spend approximately 80% of their school day in a general education classroom. Understanding the factors of teacher attitudes, self-efficacy, and use of differentiated strategies will help to contribute to the literature in regard to determining if gifted learners' academic needs are met in the general education setting.

**Description of Study:** Prior to administering the face-to-face questionnaire, an oral explanation of the study (i.e. Freitag Study Cover Letter) will be presented orally to both the instructors and students who are present. Students will be informed that their participation is completely optional and there is no expectation or requirements to participate. Potential participants will be given a printed copy of Freitag Study Cover Letter which contains information regarding the purpose of the study, benefits, risks, and confidentiality. This letter also provides the PI's name and contact information. Potential participants will be informed that completion of the survey indicates consent to participate in the study. Following the researcher's presentation to potential participants, the instructor will sign the witness form acknowledging that all relevant information describing the study which is detailed in the Freitag Study Cover Letter was presented orally to potential participants. A Witness Verification Form will be obtained for each oral presentation conducted and will be completed by the instructor for each group or class of participants. After completion of the Witness Verification Form, the instructor and researcher will leave the room. At that time, students who consent to participate in the study will complete the paper questionnaire in a sealable envelope located on a table in the classroom. An identified student will notify the instructor and researcher that all students are finished. The researcher will then collect and seal the envelope. Upon returning to the office, the researcher will store the data in a locked cabinet.

**Benefits:** Benefits of this study include but are not limited to (a) developing a better understanding of preservice and in-service teachers attitudes and beliefs about gifted learners, (b) contributing to research on the need for gifted education training in teacher education programs, and (c) contributing to the literature regarding self-efficacy and the use of differentiated instructional strategies. Research findings will be shared with all participants via a brief video shared by their instructor after all data has been analyzed and the dissertation committee has approved the final dissertation draft.

**Risks:** Participation in this study poses minimal risk to participants. Your participation is completely optional and not required or recommended by your instructor. At any point in the survey, you can decide to discontinue your participation. In addition, your grades will not positively or negatively be impacted by your participation in the survey. However, there is a possibility that some participants may feel inconvenienced or anxious that participation will result in a loss of class time being due to the time needed to complete the questionnaire.

**Confidentiality:** No identifying markers for participants will be placed on the questionnaires before or after participant completion. Signed consent is not obtained from participants to maintain confidentiality instead participants are informed that the completion of the survey indicates consent to participate in the study. Each group's completed questionnaires will be placed together in a sealable envelope and kept in a locked filing cabinet at the researcher's office until after data analysis is completed. All raw data will be shredded by the PI once data analyses have been conducted. Any electronic data will be password protected on the PI's laptop computer and deleted once analyzed and disseminated.



**Alternative Procedures:** The questionnaire will be administered only once in the classroom setting for each group to those students who are present and consent to participate in the study. As a result, participants have only one opportunity to participate.

**Participant's Assurance:** This project has been reviewed by the Institutional Review Board at USM, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997, [irb@usm.edu](mailto:irb@usm.edu). Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using this contact information provided above. Thank you in advance for your consideration of participating in this study as well as your time.

Sincerely,

*Marla D. Freitag*

Marla D. Freitag, M.Ed.  
Ph.D. Candidate, School of Education  
College of Education and Human Sciences  
The University of Southern Mississippi

## APPENDIX D – ORAL PRESENTATION WITNESS FORM



### INSTITUTIONAL REVIEW BOARD ORAL PRESENTATION WITNESS

SIGNED CONSENT PROCEDURES		
<p>This document must be completed and signed by a witness of the oral presentation to each potential research participant.</p> <ul style="list-style-type: none"> <li>Information detailed in the Oral Presentation must be discussed with all potential research participants before signing this form.</li> <li>Witness signed copies of this form should be provided to all participants.</li> <li>The witness to consent may be either a third party, such as a translator, or the Principal Investigator if he or she is able to ensure that all of the participants' questions have been adequately addressed.</li> </ul> <p style="text-align: right; font-size: small;">Last Edited March 5<sup>th</sup>, 2019</p>		
Today's date: <u>1/10/2020</u>		
PROJECT INFORMATION		
Project Title: <u>Examining the Influence of Attitudes, Self-Efficacy, and Differentiation in Educating Gifted Learners</u>		
Principal Investigator: <u>Marla Freitag</u>	Phone: <u>601-287-9002</u>	USM Email: <u>marla.Freitag@usm.edu</u>
College: <u>Education and Human Sciences</u>	School and Program: <u>School of Education, Special Education</u>	
CONSENT TO PARTICIPATE IN RESEARCH		
<p>Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.</p> <p>The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and the participant was informed that they may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect my willingness to continue participation in the project.</p> <p>Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator using the contact information provided above. This project and consent procedures have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-266-5997, <a href="mailto:irb@usm.edu">irb@usm.edu</a>.</p>		
<u>Research Participants Name</u>	<u>Witness Signature</u>	
<u>Date</u>		

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