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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

SAUDI ARABIAN GENERAL EDUCATION ELEMENTARY SCHOOL
TEACHERS' ATTITUDES TOWARD AND PERCEPTIONS
OF GIFTEDNESS AND GIFTED EDUCATION

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Education and Behavioral Sciences
School of Special Education
Special Education

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This Dissertation by: Yaser Khaled Alharbi

Entitled: *Saudi Arabian General Education Elementary School Teachers' Attitudes Toward and Perceptions of Giftedness and Gifted Education*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in the College of Education and Behavioral Sciences in the School of Special Education, and Program of Special Education.

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ABSTRACT

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The importance of developing the cognitive and affective needs of gifted students to help meet their academic needs as well as support them in achieving to their full potential has been well-established by past research. It is also confirmed by the literature that gifted and talented students have unique social-emotional needs and that the school environment plays an essential role in meeting gifted students' needs. To better serve gifted students, schools must ensure that general education teachers are knowledgeable and supportive of the distinct cognitive and affective development of these students in conjunction with their academic needs. Different factors influence the way teachers interact with gifted students, which include their attitudes and perceptions of giftedness and gifted education. It is necessary for researchers and other stakeholders to acquire a deep understanding of the attitudes and perceptions of general education teachers toward giftedness and gifted education as such an understating can aid policymakers, administrators, and education professionals in helping these teachers to create the appropriate learning environment to support these children.

While these concepts have been examined in the Western context, their exploration has been limited in Saudi Arabia. Therefore, this study was undertaken to investigate the attitudes of Saudi elementary school general education teachers toward gifted students and gifted education, as well as their perceptions of giftedness. The study sample comprised 141 teachers who

completed a cross-sectional online questionnaire that also included four open-ended questions to assess their attitudes and perceptions. The results of this study found that the participants indicated positive attitudes toward supporting the needs of gifted students and toward providing special services to gifted students. However, the participants were found to be uncertain about some of the special services (e.g., acceleration) that the literature states can be useful in supporting gifted students and about challenges gifted students might face (e.g., rejection by others). While most of the participants exhibited some lack of awareness regarding the unique affective needs of the gifted, they did indicate some understanding of giftedness as a multifaceted construct and of certain positive social and emotional characteristics of gifted students. The study's results suggest that more training in gifted education is required for general education teachers in Saudi Arabia, not only regarding basic information about gifted education and curricula, but also on how to meet both the academic and affective needs of these students.

Keywords: Gifted education, giftedness, gifted students, attitudes, perceptions, general education teachers, elementary schools, social and emotional needs, Saudi Arabia

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CHAPTER I

INTRODUCTION

Background

One of the goals of gifted education is to provide gifted learners with appropriate opportunities that will allow them to maximize their learning potential and make meaningful contributions to society (Renzulli, 2012). While all students have the right to receive high quality instruction in an educational system designed to meet their abilities and needs, this is more readily accomplished for typical students with just the basic general education curriculum. For gifted students, it is often necessary for the standard curriculum to be adjusted in different ways in order to meet their unique abilities. Gifted students differ in their needs and abilities. Some of these students exhibit high intellectual ability and are capable of extraordinary accomplishment and performance due to their advanced creativity and innovation (J. J. Gallagher, 2008). However, gifted students may have greater levels of certain social and emotional traits (e.g., motivation) when compared with their same-age peers; failure to address gifted students' affective needs could result in adverse consequences as they progress through their schooling (e.g., underachievement, dropping out of school; Ritchotte & Graefe, 2017). Therefore, gifted students require well-organized and well-designed curricula and programs to help them develop and reach their full potential. Failing to meet the needs of gifted students is not just damaging to these individuals, it can also result in a significant loss to society in terms of the contributions they might make in the future (Danielian, 2016). Gifted and talented students in any society require

special attention, both in and out of school, to ensure that their learning needs are met and that they are given opportunities to perform at a level commensurate with their potential (Kerr, 2009).

The school environment is one of the most important factors in student development. Teachers play a critical role in shaping their students' learning environment. Different factors influence the way teachers interact with students, among these are their attitudes and perceptions. Teachers' perceptions of their students, as well as the biases they hold, shape how they educate students and as a result, impact the academic and cognitive development of students. Understanding the factors that influence teachers' perceptions can help predict the degree of success they will have working with specialized student populations like gifted learners (Perković Krijan & Borić, 2015). Teachers who lack knowledge and experience regarding gifted students may find it difficult to meet the needs of these diverse learners (Paine, 1990). Researchers have found that teacher attitudes are linked to instructional knowledge that is typically acquired through teacher training programs and years of in-service teaching experience. Specifically, research has shown that teachers who do not have enough knowledge regarding gifted students and their needs tend to hold negative attitudes toward these students and toward what is required to provide them with required and necessary services (Baudson & Preckel, 2016; Carrington & Bailey, 2000). Unfortunately, failing to address and meet the needs of gifted students may impact their cognitive development as well as their developmental needs (e.g., social and emotional needs; Hargreaves, 2001).

Statement of the Problem

Research on the importance of developing the cognitive and affective needs of gifted students began decades ago (Betts & Neihart, 1985; Neihart et al., 2002). Moreover, researchers have suggested that the attitudes and perceptions of teachers regarding gifted programs and

gifted students' developmental needs can be key factors in the success of delivery of services to this student population (Baudson & Preckel, 2016; Carrington & Bailey, 2000; Scott, 2000). In response to such findings, many governments--including that of Saudi Arabia- have endeavored to make gifted programs and curricula available in every public-school setting. Since the field of gifted education is still new and not fully developed in Saudi Arabia, traditional teacher training in the country, unfortunately, tends to concentrate on academic and cognitive development (Aljughaiman & Grigorenko, 2013; Batterjee, 2013); this ignores the importance of training educators in how to develop other skills children require to be successful students and to mature into successful adults. Schools, including those in Saudi Arabia, often focus only on students who show clear signs of giftedness (e.g., excel academically), and ignore those whose giftedness is not as obvious or manifests in ways that are not easily measured by traditional grading systems or identification methods (Alamer, 2014; Aljughaiman & Ayoub, 2017; Neihart et al., 2002). Focusing entirely on building students' content knowledge and ignoring their emotional well-being can have disastrous consequences (Stuckart & Glanz, 2010). Thus, the importance of schools in meeting students' social and emotional needs cannot be underestimated, as students spend so much time in this setting (Durlak et al., 2011).

To date, the extent to which Saudi general education teachers understand and are able to meet the complex cognitive and affective needs of gifted students is not understood (Alamer, 2014; Aljughaiman & Tan, 2009; Faisal & Ghani, 2015). One way to measure their understanding is to investigate their attitudes toward and perceptions of giftedness and gifted education, since these factors are believed to have a direct impact on gifted students' development. Therefore, to better serve gifted individuals, schools must be sure teachers are knowledgeable and supportive of both the cognitive and affective development of these children

and their unique educational needs. This is the first step in understanding what services and training general education teachers require to improve the quality of gifted education in their schools.

Purpose of the Study

As noted earlier, the school environment is critical to student success. A key component of every school learning environment is, of course, the general education teacher, because this person is responsible for the quality of instruction students receive. It is, therefore, very important to investigate the attitudes and perceptions of general education teachers regarding giftedness and gifted education, to help these teachers create appropriate learning environments where gifted students can thrive, not just academically but also in terms of their social and emotional lives. These attitudes and perceptions are integral to the appropriate planning and implementation of gifted education services (J. R. Cross et al., 2013). Researchers have investigated the topic of teachers' attitudes toward gifted students and gifted education for many years (Justman & Wrightstone, 1956; Peachman, 1942, as cited in McCoach & Siegle, 2007). However, although many researchers have investigated the attitudes and perceptions of teachers regarding gifted students and gifted education in the United States and internationally, there have been contradictory findings in these studies. For example, some such studies have found teachers' attitudes toward this population to be generally positive (e.g., Troxclair, 2013); whereas other studies have found that teachers' attitudes toward gifted students are generally negative (e.g., Geake & Gross, 2008)--and, there have also been studies that found teachers' attitudes are both positive and negative (Lassig, 2009; McCoach & Siegle, 2007). Further, previous studies on teachers' perceptions of giftedness have focused on single variables, such as years of teaching

experience (McCoach & Siegle, 2007); knowledge of giftedness (Baudson & Preckel, 2016; Carrington & Bailey, 2000); and training in gifted education (Moon & Brighton, 2008).

Despite the years of research on teacher attitudes toward gifted students and gifted education, there is still no clear picture of teachers' attitudes toward these children (McCoach & Siegle, 2007), and there is a dearth of research on this topic in diverse cultural settings. Moreover, the majority of the published studies have been conducted in countries outside of Saudi Arabia, and scarce research exists that investigates general education teachers' perceptions of gifted students and gifted education in Saudi Arabia.

The unique needs of gifted children have only recently begun to be recognized in Saudi Arabia, and to date there has been a general failure to provide certain necessary services to these students (Aljughaiman & Grigorenko, 2013; Faisal & Ghani, 2015). Moreover, the majority of Saudi general education teachers are not well-prepared to work with gifted students (Alamer, 2014). In addition, the area of gifted identification in Saudi Arabia is of great concern to the country's Ministry of Higher Education (Aljughaiman & Ayoub, 2017). Although some children might be identified as gifted before they reach 6 years old, it is difficult to employ some gifted identification methods with children of a very young age (National Association for Gifted Children [NAGC], n.d.-b). Therefore, gifted identification typically occurs during the early elementary years. For this reason, and because typically the first professional in a child's life who might recognize they might be gifted is the general education teacher, this study focused on the population of Saudi general education elementary school teachers. One of the primary identification procedures in Saudi Arabia is teacher nomination. Obviously, this method is greatly influenced by the individual teacher's beliefs and perceptions regarding the concept of giftedness, including gifted social and emotional development and gifted education (de Souza

Fleith, 2000; Sak, 2004). Therefore, teachers who lack training or knowledge regarding giftedness and gifted education, may not be able to recognize and identify the full diversity of gifted students (Aljughaiman & Ayoub, 2017). Based on a report regarding the state of gifted programs produced by the Saudi Ministry of Education in 2016, not every public school in the country has a gifted program or even staff qualified and certified to work with gifted students. This again identifies a critical issue where Saudi students who might be gifted may fail to have the opportunity to be identified and/or receive gifted services in these schools. Furthermore, given this gap in the research, it is important to acquire a basic understanding of elementary school general education teachers' attitudes toward and knowledge of giftedness and gifted education in Saudi Arabia, since many gifted services and programs in the country are provided by these individuals at the elementary school level in the general education classroom.

Research Questions

This quantitative study investigated Saudi elementary school general education teachers' attitudes and perceptions regarding giftedness and gifted education. The results of this research provide a comprehensive understanding of Saudi teachers' general comprehension of gifted education, gifted students, and the social and emotional needs of gifted children, which in turn will help in developing and delivering the training teachers need to effectively serve this population in Saudi Arabia.

The following research questions guided this study.

- Q1 What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?
- Q2 What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?
- Q3 What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?

Significance of the Study

Given the role of the school environment and how much time gifted students spend at school, researchers have found teachers to be an important key element in student outcomes (Miedijensky, 2018; VanTassel-Baska & Hubbard, 2016). Their understanding of the special needs of gifted students can positively impact educational outcomes of these students. However, there is limited research based in Saudi Arabia regarding general education teachers' attitudes toward and perceptions of the education of gifted students, in part because the Saudi government has only relatively recently started mandating the provision of gifted services (Alamer, 2014). This is an issue that has continued over several decades. In the 1960s, the Saudi Ministry of Education passed the first educational legislation that stated all gifted individuals have the right to receive gifted services in schools to support their talents and abilities (Aljughaiman & Ayoub, 2012). However, despite this directive, appropriate gifted services and programs for this population were not developed and introduced into the educational system until 1990, when the Ministry of Education issued the directive on gifted education, "Talents Search" (Aljughaiman & Ayoub, 2012). While these policy changes and the introduction of the Talents Search legislation helped educators better serve gifted students, Saudi programs are still inadequate to completely meet the full needs of these children.

Therefore, the findings of this study could help stakeholders in Saudi Arabia, including school administrators and gifted coordinators, to better understand general education teachers' attitudes toward gifted students' educational needs as well as how those attitudes affect their perceptions. In turn, such understanding will allow these educational professionals to determine how to provide additional support and training to Saudi teachers regarding how to meet the needs of gifted students in schools. Further, the current research endeavors to enrich the literature on

general education teachers' attitudes toward and perceptions of the cognitive and affective needs of gifted children, a topic that has received a great deal of attention in Western countries but that is still emerging in Saudi Arabia. This means the findings of this study could help other researchers, especially those in non-Western countries, interested in gifted education and the needs of these children build upon the results to determine how to provide additional support for general education teachers in meeting the needs of such students in the classroom.

Delimitations

Different limitations impacted the data collection and the findings of this study. First of all, the research only included elementary school general education teachers; general education teachers who teach other levels (e.g., middle or high school) were excluded from the study. Therefore, the findings of this study cannot be generalized to all general education teachers in Saudi Arabia. In addition, the study was conducted in the central region of Saudi Arabia and only recruited from the cities of Riyadh, Qassim, Medina, and Hail – as these were the most accessible to the researcher. Thus, the results cannot be assumed to be generalizable across all provinces in Saudi Arabia. However, since these cities are densely populated, they have a high number of school and their teachers come from different regions and cities in Saudi Arabia; therefore, the researcher hopes that the findings may be generalizable to other school settings. In addition, the exclusion criteria for the study included gifted and special education teachers. While their attitudes and perceptions could have been investigated through this study, the researcher was only interested in obtaining data on general education teachers due to the lack of research on this population in Saudi Arabia and the amount of time that gifted students spend in the general education classroom.

Definitions of Terms

Affective needs. In education, this term is another way of referring to social and emotional or socio-emotional needs. It acknowledges that children, including gifted children, are human beings whose emotions, for example, reasonably affect how they function in the world and, in the context of this study, in school. (Please see also the definition of *social-emotional needs*, below.)

Attitudes. According to *Webster's Dictionary*, an attitude is “a manner of acting, thinking, or feeling that shows one’s disposition, opinion, etc.” (David, 2005, p. 33). Shapiro (2003) established this definition: “a general tendency of an individual to act in a certain way under special conditions” (p. 9). In this study, the term will be used to reference the feelings and ways of thinking teachers have toward gifted students.

General education teacher. An individual who is certified to work and teach the general education curriculum in a classroom setting, in a subject or a variety of subjects, to students at least 70% of whom are not identified as having any special needs or disabilities.

Giftedness. There is no one universal definition of giftedness. However, since the study will be conducted in Saudi Arabia, the official definition established in that country will be used for this study. The Saudi Ministry of Education definition of this characteristic in students is:

Students who have unusual capabilities and skills or exhibit distinguished performance in comparison with their peers in one or more areas that society appreciates, especially in the areas of mental excellence, creative thinking, educational attainment, and special

skills and abilities, who require special educational services that do not correspond to those offered in the ordinary school curriculum. (Mawhiba, 1997)

Knowledge. According to *Webster's Dictionary*, the word is defined as, “the fact or condition of knowing something with familiarity gained through experience or association.” For the purposes of this study, “knowledge” will refer to the foundational information general education teachers possess about gifted education and about the social and emotional characteristics of the gifted.

Perceptions. These are the ideas individuals have about people or things that are shaped by their personal experiences and understanding. In the context of this study, this refers to the thoughts the respondents already possessed about giftedness and gifted education, developed and acquired before they took the survey, through their life experiences.

Social-emotional needs. These are the affective needs that gifted and talented individuals have along with their cognitive developmental needs. These may include “heightened or unusual sensitivity to self-awareness, emotions, expectations of themselves or others, and a sense of justice, moral judgment, or altruism” (NAGC, n.d.-a). Behaviors related to unmet social and emotional needs may include, “perfectionism, depression, low self-concept, and or underachievement” (NAGC, n.d.-a).

Summary

Gifted students need a well-organized learning opportunity and curriculum to develop their abilities and learning potential. Teachers play a critical role in the development of both the cognitive and affective needs of gifted students. Previous research has shown that teachers who have positive attitudes and perceptions toward gifted students and their needs can meet the diverse needs of these students in their classroom. Therefore, this study investigated elementary

school teachers' attitudes and perceptions toward giftedness and gifted education. A quantitative study design was employed to answer the research questions. A cross sectional survey that included open-ended questions were used as a collection method.

CHAPTER II

LITERATURE REVIEW

Introduction

In this chapter, the following topics will be explored through an examination of the existing research. First, this section will present different definitions and common conceptions of giftedness. Several theories and models pertinent to the affective needs of gifted children will also be discussed. Next, this review will describe the literature on what giftedness “looks like,” including definitions, identification methods, and programming, both in the United States and specifically in Saudi Arabia. This chapter also will include descriptions of previous studies that have investigated teachers’ attitudes and knowledge toward giftedness and gifted education, internationally. Lastly, the final section of this literature review will include a discussion of the factors that influence teachers’ attitudes and knowledge of giftedness and gifted education.

Definitions and Conceptions of Giftedness

Throughout history, people have always been intrigued by those who display superior abilities (Renzulli, 1979). Even before 2200 BCE, China had developed an intricate system of competitive examinations to identify the top performers in the population so that they could be placed in government positions (Renzulli, 1979). Thus, various views of giftedness emerged over time, which included socially, culturally, and economically based perspectives, that influenced how giftedness came to be defined (Davis et al., 2011). The meaning of giftedness varies and is flexible, based on the individual’s own culture and interests; this means that there is not one universal definition of giftedness (Davis et al., 2011; Grubb, 2008). Freeman (2005) stated that

an individual's conception of giftedness depends on how their particular society perceives giftedness. For example, the early concepts of giftedness in Ancient Greece revolved around the perception of physical strength and military ability, because these were traits that were prized in that society at that time (Davis et al., 2011). In ancient China, giftedness was related to the perception of a person's inventiveness.

In the more modern era, most societies came to consider giftedness to be more related to and defined by intelligence. Thus, the primary focus when defining giftedness until very recently has been on high intellectual ability, determined through cognitive assessment, such as an IQ test. The drawback to this is that giftedness is then seen as generic, where the only recognized trait is the innate, measurable quality of high intelligence (Robinson et al., 2000). The word "intelligence," however, is defined in different ways, including a greater capacity for: understanding, abstract thought, planning, learning, communication, reasoning, and most importantly, problem-solving (Goldstein, 2015). Psychologists specializing in the study of intelligence also have defined the concept through different lenses. For example, renowned Swiss psychologist and child development expert Jean Piaget (1963) described intelligence as "assimilation to the extent that it incorporates all the given data of experience within its framework" (p. 6).

Gardner (1993) defined intelligence as, "The capacity to solve problems or to fashion products that are valued in one or more cultural settings" (p. 7). He also detailed a set of eight criteria that comprise human intelligence, which included among other requirements that: (a) the concept the intelligence is related to must be consistent across history and cultures; (b) it must be possible to establish through neuroscience that "some area of the brain is specialized to control that particular capacity;" and (c) there must be identifiable instances (case studies) of people who

represent extraordinary examples of the type of intelligence (Gardner, 1993, p. 7). These categories and the broad definition of intelligence that Gardner developed emphasize the importance of expanding how intelligence is defined, identified, and supported in Saudi Arabia. Narrow identification methods that focus on certain areas, such as math and science, do not, according to Gardner, encompass all of the categories of intelligence he described. In addition, Gardner believed that culture plays an important role in the development of each individual's intelligence, stating that the cultural value that is placed in an individual culture on the ability to perform a certain task provides the motivation to become skilled at that task. Consequently, some forms of intelligence might be highly developed in many individuals in a particular culture but might not be as developed in a different culture (Brualdi, 1996). When particular traits are culturally valued, or even just noticed, those traits are more likely to be identified with giftedness within the culture. Conversely, if a person possesses giftedness in an area that their culture does not prize or identify as being worthy of development, that person will likely not be recognized as gifted by their culture. In the area of quantifying intelligence, most credit Alfred Binet and Francis Galton with the development of the instruments for measuring intelligence, and in Binet's case, with the theories of intelligence upon which we still rely today (Goldstein, 2015). Galton (1822-1911) focused primarily on research in his ideas. He believed that intelligence was related to one's keen senses such as touch, smell, vision, hearing, and reaction time. He posited that one's sensory ability and intelligence are related and that intelligence is due to natural selection and heredity, which could have survival value (Colangelo & Davis, 2003).

In 1904, Binet developed an assessment to measure intelligence that was designed to identify students with cognitive and developmental disabilities and that was based on an analysis of the individual's attention, memory, reasoning, judgment, and comprehension. Binet was also

the first to posit the concept of “mental age.” This refers to an individual’s age with regard to intellectual ability and is separate from physical age (Colangelo & Davis, 2003). The Stanford-Binet Intelligence test was first developed to identify children who might benefit from or require special education services. In order to do so, Binet had developed tests that measured things such as: “(a) hand squeezing strength, (b) hand speed in moving 50 cm, (c) the amount of pressure on the forehead that caused pain, (d) detecting differences in hand hold weight, (e) or reaction time to sounds or in naming colors”--but had determined there were no substantial differences in achievement in these areas between children with disabilities and their typical peers (Davis et al., 2011, p. 5). However, when Binet focused on factors such as attention, memory, judgment, reasoning, and comprehension, he was more able to make specific differentiations between these children and those without disabilities. Therefore, Binet asserted intelligence is a broad concept that cannot be quantified with a single number and that there are many different factors that must be considered to actually assess the intelligence of an individual fully.

Following Binet’s work, giftedness continued to be defined in terms of intelligence. Lewis Terman (1926), for example, defined giftedness as “the top 1% level in general intellectual ability as measured by the Stanford-Binet Intelligence Scale or a comparable instrument” (p. 43). In his longitudinal study involving 1,528 children who had been identified as gifted by their teachers, Terman sought to learn more about the characteristics and development of these children as they matured into adulthood. Findings from this study dispelled many commonly held myths about gifted individuals. For example, Terman found these individuals did not have more health problems than their typical peers and that, on average, they were more socially well-adjusted than society believed them to be. However, Leta Stetter Hollingworth, considered a major voice in the field of educational psychology, did not necessarily agree. Hollingworth,

who became interested in giftedness when one of her students scored 180 on the Stanford-Binet test of intelligence (Davis et al., 2011), argued that such children may have emotional problems and pointed out that the greater the gift, the greater the need for emotional education (Colangelo & Davis, 2003).

Theories of Intelligence

Theory of Fluid and Crystallized Intelligence

Several different theories of intelligence have changed how educators view giftedness and its development. The first of these theories is the “Theory of Fluid and Crystallized Intelligence,” developed by Raymond Cattell in 1943. Cattell believed that general intelligence (represented by *g*) is comprised of two types of intelligence that come from different abilities and interact with each other to make up the overall intelligence of the individual. The first type is fluid intelligence (*gf*) and the second type is crystallized intelligence (*gc*; Cattell, 1963). Cattell (1963) expanded his theory with John Horn, who was his student, and they posited that the two types of intelligence work together and comprise an individual’s intelligence as a whole.

Fluid intelligence is defined as the ability to analyze and solve problems in a novel and unique way that does not require previous knowledge or past experience. This form of intelligence correlates with such skills such as comprehension, reasoning, abstract thinking, and logic. Fluid intelligence has also been found to be an important predictor of a child’s behavior and performance in the classroom (Unsworth et al., 2014). Conversely, crystallized intelligence is related to one’s ability to apply previously acquired knowledge and experiences to problem-solving. Therefore, crystallized intelligence develops over one’s lifetime through the experience gained as we mature (e.g., development of reading comprehension or acquisition of vocabulary).

Sternberg's Triarchic Theory of Intelligence

Cattell's theory of intelligence greatly influenced the "Triarchic Theory of Intelligence" that was developed in the 1980s by Robert Sternberg. The later theory was used to inform many of the changes present in the fourth edition of the Stanford-Binet Intelligence Scale, which was originally published in 1986 (Silverman, 1998). Sternberg's theory takes into account both cognition and context in determining intelligence, meaning his theory looks at the process of intelligence as distinct components rather than a single ability that can be determined by a single test, such as a traditional IQ test (Sternberg, 2010). Sternberg looked at intelligence as how a person interacts with the environment over their whole lifespan. He also believed that intelligence results from how individuals process information and how they then apply that processing to their experiences for the purpose of adapting to their environment (Sternberg et al., 2000). He also believed that intelligence and intellectual skills form the basis of intellectual achievement. Under this theory, a person's ability to adapt and contribute to the environment using knowledge is a significant factor in determining intelligence.

Sternberg et al. (2000) also identified three types of thinking that interact with one another and influence intelligence: practical thinking, analytical thinking, and creative thinking. The three types of thinking are essential to problem-solving ability and information processing. Practical thinking is involved when an individual applies, utilizes, implements, and contextualizes. It is also related to the knowledge one has acquired through experience to find solutions that work in everyday life. Sternberg (1988) stated that individuals with high practical intelligence scores may or may not score high in creative and analytical intelligence; thus, practical thinking appears to be separate from what is measured by traditional IQ testing. Analytical thinking involves trying to analyze, evaluate, judge, and compare and contrast. This

type of thinking is commonly aligned with computations and academic problem-solving, like that involved in solving a challenging math problem. Creative thinking is when an individual creates, invents, discovers, and explores. When engaging in this type of thinking, the individual is able to invent or imagine a solution to a problem or situation in a creative way; often, this is referred to as “thinking outside of the box.” Based on this theory, the Sternberg Triarchic Abilities Test (STAT) was developed to measure the three distinct processes of intelligence (practical, creative, and analytical thinking) the theory identified.

Gardner’s Theory of Multiple Intelligences

Gardner’s theory of multiple intelligences, first described in his 1983 book *Frames of Mind: Theories of Multiple Intelligences*, broadened how we understand intelligence (Gardner et al., 1996). His theory is based on the idea that all of these types of intelligence could be nurtured in all human beings and that every individual can develop these intelligences over their lifetime through experience (Costa & Kallick, 2008). This theory rests on the belief that individuals possess different autonomous intelligences in their lives and that they draw on these intelligences to create products and solve problems related to the environment in which they live. Initially, Gardner (1983) identified seven intelligences: verbal/linguistic, logical/mathematical, musical, visual/spatial, bodily/kinesthetic, interpersonal, and intrapersonal. Subsequently, he added an eighth intelligence in the 1990s, naturalist intelligence (Gardner et al., 1996).

With his theory of multiple intelligences, Gardner challenged our understanding of intelligence as limited to only one or two areas (e.g., verbal and mathematical) and broadened it to represent more of a spectrum of human ability. Gardner agreed with Sternberg that intelligence may be found in a multitude of settings and that it is, therefore, not easily measured by a single test. In addition, Gardner built his theory based on the belief that there are different

ways of learning, knowing, and expressing knowledge and that we must incorporate these different approaches into how education is structured and provided (Gardner, 1993).

The Three-Ring Conception of Giftedness

Another theory that changed how psychologists view giftedness was the Three-Ring Conception of Giftedness, proposed by Renzulli in 1978. Even though this theory was originally rejected by gifted educators, it eventually became the most widely accepted conceptualization of giftedness in the field (Renzulli, 2005). This change in attitude is related to the fact that the theory shifted the focus in giftedness from solely IQ scores toward defining giftedness more broadly and inclusively, to comprise other components such as, for example, the child's performance in the classroom. Renzulli (2004) stated that using IQ alone to define giftedness was conservative at best. The foundation of Renzulli's more comprehensive theory involved two categories to represent the overall theme of giftedness or gifted behavior, which were: "schoolhouse giftedness and creative productive giftedness" (p. 8). Renzulli endeavored to identify gifted behaviors by incorporating his belief that in order for a gifted individual to exhibit or "produce" gifted behavior, there needs to be an interaction between three basic clusters of traits (see Figure 1).

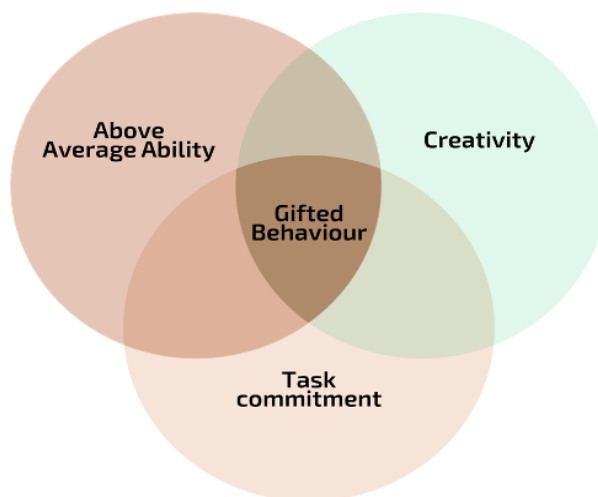


Figure 1. Renzulli's (2003) Three-Ring Conceptions of Giftedness.

However, Renzulli (2005) cautioned that no single cluster of traits is solely responsible for giftedness; but rather, that it is an interaction among the clusters that is the necessary catalyst for productive accomplishment (p. 14). Thus, each of these clusters plays an important role in the development of gifted behavior. Renzulli's (1978) early definition explains this in detail:

Giftedness consists of an interaction among three basic clusters of human traits - these clusters being above average abilities, high level of task commitment, and high levels of creativity. Gifted and talented children are those processing or capable of processing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through instructional programs (p. 261).

In short, as noted earlier, for many decades, giftedness was defined and determined based strictly on intelligence; thus, IQ scores were the main criteria for determining whether a student

is gifted and should receive gifted services. However, in more recent years, due to newer perspectives from researchers and educators that giftedness goes beyond simple intelligence, the majority of definitions of giftedness have shifted to focus more on performance than solely IQ scores and have also been expanded to include other components (Renzulli, 2004). The following paragraphs will address the definitions that are commonly cited and used in gifted education and will also describe characteristics of gifted students.

Definitions of Giftedness

There is no single, universally agreed-upon definition of giftedness; however, one of the most commonly relied upon definitions among gifted educators is that in Marland (1972), which states:

Gifted and talented children are those identified by professional qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services normally provided by the regular school program in order to realize their contribution to self and society. Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination: general intellectual ability, specific academic ability, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability. (Marland, 1972, p. 8)

A more recent definition is that of the National Association for Gifted Children (2010), which states:

Those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in the top 10% or rarer) in one or more domains. Domains include any structured area of activity

with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, sports). (para. 1)

Characteristics of Gifted Students

Since there is no agreement regarding a single definition of giftedness, it is necessary to approach the term by first working to understand the multifaceted nature of giftedness (Rimm et al., 2018). Gifted scholars and educators have noted many characteristics that have been found to be indicative of giftedness (Galbraith & Delisle, 2015). What is generally agreed upon, however, is that each gifted individual is unique in how their giftedness is expressed, how it is identified, and how that individual needs to be served (Rimm et al., 2018). For example, Terman's (1926) longitudinal study, involving 1,528 children who had been identified as gifted by their teachers, found that when compared with their typical peers, gifted students were better adjusted and higher achievers as children and adults, learned quickly, had diverse interests and hobbies, were more confident, tended to have strong leadership skills, and exhibited more desire to excel. In the modern era, these traits have come to be generally described as including: (a) advanced language ability (e.g., reading early, advanced vocabulary, strong memory); (b) motivation; (c) persistence; (d) curiosity; (e) imagination; and (f) creativity.

Due to how wide-ranging gifted traits may be, schools and teachers need to understand the full spectrum of traits gifted students may exhibit so as to best support their cognitive development. Failing to meet the cognitive needs of gifted students may lead to such negative issues as lost potential and underachievement. Some research has found that such impacts, which might seem minor, can prove to be extremely severe when schools and educators are not sufficiently aware and attentive to the cognitive needs of gifted children, leading to loss of

interest and motivation in learning, as well as stress and anxiety, and even behavioral and psychosomatic disorders (Vaivre-Douret, 2011).

In summary, obtaining a better understanding of the cognitive development of high-potential children is critical. However, while that is certainly the case, we cannot prioritize understanding of cognitive development and its impact over other equally important factors, such as social and emotional development. Educators need to be more aware of and concerned about the importance of affective factors in gifted children's learning and development, including obtaining a comprehensive understanding of their personal growth, values, feelings, and interpersonal relations--all of which must be taken into consideration when developing curricula that support the whole child, rather than simply focusing on the child's academic achievement (Neihart & Betts, 2010). The following section will discuss the affective traits the literature identified as being important to consider in regard to better serving and understanding the needs of the gifted individual.

Affective Traits of Gifted Children

In recent years, researchers have begun to emphasize the need to examine giftedness in terms of the whole child, rather than focusing on specific traits. Although cognition--or intelligenc--and affect are often viewed separately in the field of education, researchers contend that they cannot be separated. As Olenchak (2009) stated, there is a clear link between cognition and affective development, which plays an important role in the overall performance of gifted children. However, educators often fail to take that into consideration when dealing with gifted children and/or preparing gifted curricula. Olenchak (2009) further indicated that cognition may be activated by emotional stimuli, meaning a child's thinking, problem-solving, and decision-making abilities are improved when a child is emotionally balanced and has a positive attitude

toward learning or other experiences. The development of social and emotional skills in gifted children is often characterized as asynchronous, because these individuals possess advanced cognitive abilities while exhibiting heightened intensity; this creates a heightened awareness that may cause them to respond and behave differently from the norm (Morelock, 1992). Morelock (1992) stated that gifted children's cognitive ability is often more advanced than their physical and emotional development, which may result in issues as they age.

Conversely, researchers contend that gifted children may have greater levels of certain social and emotional traits (e.g., motivation) when compared with their same-age peers; however, failure to address gifted students' affective needs could result in adverse consequences as they progress through their schooling (e.g., underachievement, dropping out of school; Ritchotte & Graefe, 2017). T. Cross (2017), for example, contended that there is a strong relationship between giftedness and extreme emotionality, which arises out of the way that gifted individuals experience and view the world around them. Gifted children, despite their tendency to exhibit high levels of ability in the understanding of difficult and complex concepts, such as life and death, may have difficulty healthily processing their thoughts regarding such concepts (Lamont, 2012). With that said, there are other researchers who continue to debate whether gifted children actually have unique social and emotional characteristics specifically because they are "gifted and talented" (Hébert, 2011).

Social and Emotional Traits of the Gifted and Related Theories

After an extensive review of the literature, Hébert (2011) created a list of social and emotional traits, characteristics, and behaviors that are commonly found in gifted children. This list included:

(a) perfectionism, (b) internal motivation and inner locus of control, (c) emotional sensitivity, intensity, and depth, (d) empathy, (e) advanced levels of moral maturity with consistency between values and actions, (f) strong need for self-actualization, (g) highly developed sense of humor, and (h) resilience. (p. 55)

Three of these characteristics will be described in more depth: (a) moral maturity, (b) a strong need for self-actualization, and (c) emotional intensity.

Moral Maturity

Morality has been defined as a “set of internalized principles or ideas” that guide an individual’s ability to distinguish between right and wrong and to act accordingly on that distinction (Hébert, 2011, p. 94). Moral maturity is often a common characteristic of gifted and talented children from an early age. Gifted children and teenagers tend to have more advanced moral maturity in thought and evaluative capability than their typical same-age peers (Hébert, 2011). Different theories on moral development have examined morality from different perspectives. Psychologists have emphasized the affective component of behavior, which describes how individuals are motivated to act based on their ethical principles and the desire to seek feeling positive emotions, such as pride, and avoid negative feelings, such as guilt or shame. Some gifted children may experience a greater degree of moral development due to their higher ability in abstract reasoning and the complexity of their thought processes (Silverman, 1994). This sensitivity regarding morality greatly affects the social and emotional development of gifted and talented children; as a result, this area has been a focus of study for a number of psychologists. In addition, intellectually gifted children are believed by some theorists to reach a higher stage of moral reasoning earlier than their chronological peers (Tirri & Pehkonen, 2002).

Lawrence Kohlberg examined the moral development of children and constructed a theory on how moral reasoning develops in the individual. Kohlberg's 1958 theory focused on explaining the role of moral judgment in the thinking process of an individual regarding a specific behavior in response to a particular dilemma. His theory built upon Piaget's ideas regarding the two stages of moral development of children, by adding four more stages. Kohlberg believed that moral development is a continuous process that happens throughout the lifespan of an individual. He also asserted, in his work with his collaborator Richard Hersh, that while cognitive development is important, it is not as important as moral development (Kohlberg & Hersh, 1977). Kohlberg's theory has six stages that span the three levels of moral development, which are: preconventional, conventional, and postconventional; each of these levels has two stages with each new stage replacing the previous one.

The six stages of the theory are: (a) obedience and punishment orientation, (b) self-interest orientation, (c) interpersonal accord and conformity, (d) authority and social order maintaining orientation, (e) social contract orientation, and (f) universal ethical principles. Not every individual will achieve all the stages over a lifetime. According to Kohlberg's theory on moral development, people progress through the stages one at a time and incrementally; individuals cannot "skip" to the next stage without fully processing the one before it. For example, people cannot move from the self-interest orientation stage to what is sometimes termed the law-and-order orientation, without going through the interpersonal accord stage. The methodical transition through Kohlberg's stages of moral development must be well understood by educators when working with all children, including gifted children, in order to ensure that each child is supported in developing moral judgement so that they may reach their full, moral potential (Spreacker, 2001). It is also necessary to understand that the concept of morality

comprises other components--such as sensitivity, judgment, and motivation--to consider the impact of affective and social factors that play a vital role in moral conduct and development (Tirri, 2010).

This is particularly important when considering the moral development of gifted children, who usually score higher than their same-age peers on measures of moral judgment (Derryberry & Barger, 2008; Lee & Olszewski-Kubilius, 2006), because the earlier development of moral judgement in gifted children does not necessarily translate to such individuals being able to more easily or adeptly engage in moral behavior (Tirri, 2010). For example, at the adolescent stage, individuals are constructing a personal value system, but this may not come as easily to gifted children as earlier aspects of moral development due to characteristics unique to the gifted, such as heightened sensitivity and tendencies toward perfectionism. Therefore, understanding the potentially negative impacts the traits of giftedness might have on the progress of these individuals as they move through the stages of moral development is essential to supporting them in reaching the highest stage of moral development.

Strong Need for Self-Actualization

Self-actualization has been defined as the tendency to strive to achieve to one's potential (Lewis, 1994). The unique characteristics of the gifted and talented mean that these individuals have greater potential for developing the skills that promote self-actualization (Lewis, 1994). Gifted children tend to be more self-actualized compared to their typical peers because they are more likely to have the advanced critical thinking, problem-solving, and emotional integrity required for self-actualization. It is important to understand the process of self-actualization to fully understand the developmental needs of gifted children, especially, because these children may have a stronger drive for self-actualization--or "hunger for growth"--than their typical same-

age peers (Hébert, 2011, p. 98). In 1970, Maslow developed a theory to explain the psychological development of children based on the meeting of their essential human needs. His theory asserted that all humans have the same basic needs that must be satisfied in order for an individual to complete their hierarchy of needs (T. L. Cross, 1997). Maslow identified five categories of basic need: physiological, safety, love and belonging, esteem, and self-actualization; these were presented in a pyramid to indicate how an individual must progress through each to move on to the next (Berk, 2004). The Maslow hierarchy is presented in Figure 2. In addition, Maslow stated that once the needs of one level have been met, the individual is then motivated to pursue having the needs of the next level met, until the needs of the top level (self-actualization) are achieved.

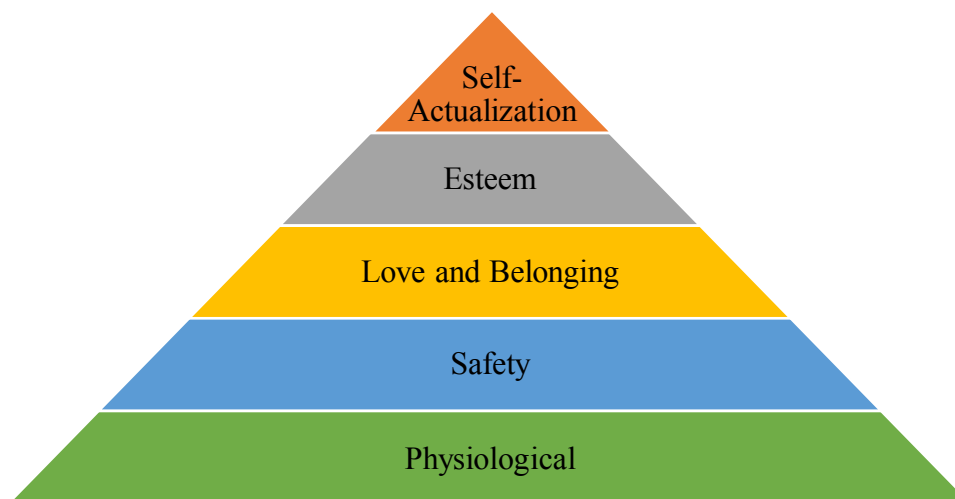


Figure 2. Maslow's Hierarchy of Needs. From “Development Through the Lifespan,” 2nd ed., by L. E. Berk, 2001. Copyright 2001 by Allyn & Bacon.

According to Maslow’s Hierarchy of Needs, every individual has the potential to move through the stages; however, people may advance through them at different rates and some may be stymied and never advance beyond a particular level (Berk, 2004). When applying the theory

to gifted individuals, it is important to first recognize that self-actualization, which is the highest tier, is what is desired for all people. This is because it is not measured against an external, objective concept of ability or intelligence, it is merely the achievement of any individual's unique fullest potential (T. L. Cross, 1997). This is true for gifted individuals as well. Gifted children reach their full potential when they reach the top level of the pyramid (self-actualization). If gifted individuals' needs are not met at a lower level, they will struggle to find ways to satisfy their needs at their current level and then similarly at the next level (T. L. Cross, 1997). Therefore, it is very important that educators and professionals who work with gifted children consider the fact that gifted individuals might need different types of support at the lower levels so as to achieve self-actualization.

Emotional Intensity and Overexcitability

According to some research, a key trait of gifted children is their emotional intensity, which tends to be greater than that of their same-age peers because these children have a different way of experiencing the world (Sword, 2001). Emotional intensity in the gifted can be seen and expressed in different ways, including an intense positive or negative feeling--or feelings that are both negative and positive. Physical symptoms may include such things as stomach tension and headaches. These individuals also tend to have strong affective memory, where they tend to re-experience the intense feelings they experienced during a given incident; these feelings can lead to suicidal ideation and depressive mood (Sword, 2001).

Overexcitability (OE) is one of the most fundamental aspects of human developmental potential; it is defined as, "a heightened physiological experience of sensory stimuli resulting from increased neuronal sensitivities" (Mendaglio & Tillier, 2006, p. 69). The term "overexcitability" refers to an abundance of intellectual, creative, physical, sensual, and

emotional energy, where the degree of the energy is positively related to childhood emotional development (Hébert, 2011). The Polish psychiatrist Kazimierz Dąbrowski defined overexcitability as characterized by four factors: “(a) the reaction exceeds the stimulus, (b) the reaction lasts much longer than average, (c) the reaction is not often related to the stimulus, and (d) emotional experience is promptly related to the sympathetic nerve system” (Piechowski & Chucker, 2011, p. 202). Dąbrowski also described five forms of overexcitability that might cause an individual to experience daily life more intensely: psychomotor, sensual, imaginal, intellectual, and emotional. These five OE types are related to the level of personal development that individuals go through as they transition to adulthood; they are also related to differences in psychological characteristics of individuals that in turn affect their advancement through the hierarchy of needs (Mendaglio & Tillier, 2006).

In 1964, Dąbrowski proposed the Theory of Positive Disintegration (TPD), that provides a foundation for understanding: (a) the complexity of emotional sensitivity and intensity, (b) misdiagnoses of related conditions, (c) how to assess social and emotional needs, and (d) creative personality development of individuals over their lifetimes (Mendaglio & Tillier, 2006; Silverman, 2000). When applying TPD to the study of gifted individuals, it is important to consider overexcitability (Mendaglio & Tillier, 2006). Moreover, researchers applying TPD may tend to focus exclusively on aspects of overexcitability. The five types of OE were developed to explain personality development by employing a multilevel and hierarchical view of life. Thus, one important factor in determining personality growth is the individual’s developmental potential (Mendaglio & Tillier, 2006). Dąbrowski also asserted that some people are predisposed to experience life with more intensity, which leads them to experience severe crises more frequently. He also felt that this high intensity is rooted in genetic characteristics that he labeled

“developmental potential” (Lind, 2001). Interestingly, the theory was not initially developed to be applied to the gifted and talented; however, during his research, Dąbrowski found that gifted individuals experience higher levels of developmental potential, which is predictive of increased disintegration and personality growth (Mendaglio & Tillier, 2006; Silverman, 2009).

Throughout his work with gifted and talented individuals, Dąbrowski found that these people tend to exhibit a high level of empathy, self-reflection, moral responsibility, and sensitivity when compared to their typical peers; however, during times of crisis, such individuals show intense inner conflict, shame and guilt, anxiety, and feelings of worthlessness toward their ideas due to their positive maladjustment (Nelson, 1989). Dąbrowski developed his theory based on the belief that conflict and inner suffering are necessary for advanced development. In fact, the title of the theory reflects the impact of the central and decisive role disintegration plays in the emotional development of the gifted (Tillier, 1999). Lind (2001) stated that conflict and inner suffering are two important components of a “movement toward a hierarchy of values based on altruism for movement from what is to what ought to be” (p. 1).

In 1964, Dąbrowski suggested five levels of human development, including: primary integration, unilevel disintegration, spontaneous multilevel disintegration, organized multilevel disintegration, and secondary integration. This advanced development is usually seen in people who possess strong developmental potential and three major aspects, including overexcitability (both intellectual and emotional), specific ability and talent, and a drive toward autonomous growth (Mendaglio & Tillier, 2006).

The Theory of Positive Disintegration (TPD) has attracted attention from gifted education scholars due to its unique implications for the gifted individual. It has been shown to be effective in helping the gifted individual be more well-adjusted in life. Pyryt (2008) asserted that TPD has

strong implications for gifted education for a variety of reasons. First, the primary purpose of the model is to understand the various aspects of giftedness, especially within the social-emotional domain, which includes gifted individuals' emotional sensitivity and intensity. When examining emotional overexcitability, Pyryt (2008) also asserted the theory was relevant as the OE of these individuals tends to deviate from that of other individuals; given that current gifted services tend to only focus on the cognitive domain of the gifted individual, it is important that OE be incorporated into how we work with and educate gifted individuals so that they can reach their highest level of potential.

Second, due to their emotional intensity, gifted individuals may tend to experience greater internal conflict; therefore, the theory may be employed to aid them in viewing this conflict positively, rather than perceiving it as negative. Such conflicts might include learning how to view an existential struggle as a positive indicator of developmental potential. Finally, the theory highlights how giftedness manifests in different forms, including: intellectually, creatively, emotionally, sensually, and physically; and, that a combination of these overexcitabilities may lead to a better and more holistic manifestation of these individuals' gifts (Pyryt, 2008).

Erickson's Stages of Psychosocial Development

Gifted education researchers have applied Erik Erikson's Stages of Psychosocial Development to the development of gifted children. Erikson was one of the most influential thinkers in the field of psychology; he was inspired by and a contemporary of, although much younger, Sigmund Freud. In 1964, Erikson's theory expanded our understanding of human development in the early years of childhood (Eby & Smutny, 1990). The theory described human development across eight stages of one's lifespan. According to Erickson, in each of these

developmental stages, a crisis occurs that must be resolved (T. L. Cross, 2001). As T. L. Cross (2001) indicated, Erikson's theory is important for different reasons, one of which is its establishment of a framework for understanding the typical psychological development of an individual.

Second, this theory differs from the traditional thinking of psychologists, which posited that people stop developing when they reach adolescence. Erickson also postulated that an individual's identity is free from internal conflict; however, it is subject to the development of psychosocial conflict.

The theory provides a framework for understanding the experiences that impact an individual's needs as they develop throughout their lifetime. Understanding and accommodating these needs for children, especially those who are gifted, supports healthy development over the life of the individual. T. L. Cross (2001) stated that the adults in gifted individuals' lives should guide development, especially at an early age, by supporting them in successfully resolving the crises and conflicts that Erikson outlined. This is necessary because gifted individuals may be affected by psychological crises at an early age, due to the disparity between their chronological age and their intellectual age.

Erikson's theory provides great insight into the stages of human development. Although the theory evolved outside of the field of gifted education, it quickly gained attention from gifted educators and scholars. The theory emphasizes the importance of the environment that surrounds the child and its impact on the development of their ability and talent. Eby and Smutny (1990) indicated that supportive home and school environments aid gifted children in developing their talents to their fullest potential. Thus, Erikson's theory allows those around gifted children to

understand the affective and cognitive environment that best encourages and supports the development of their talent.

In addition, the theory provides gifted teachers with some understanding of the best practices that are appropriate at every stage of the child's development. T. L. Cross (2001) stated that successful application of Erikson's theory aids gifted children in leading their lives with "feeling[s] of hope, will, purpose, competence, fidelity, love, care, and wisdom" (p. 61). Furthermore, Erikson's theory may support care providers in allowing their children to navigate each stage in a "balanced manner," which, in turn, will help children develop agency over their own lives. Through achieving balance in these stages, children will also develop greater purpose in their lives and the competence necessary to develop a "flexible," "empathetic," and "humble" identity (Chou, 2013, p. 4).

In short, although the cognitive and affective development of gifted individuals is well researched, study in these areas does not always translate into practice when it comes to gifted programming in the United States and other countries. Thus, it is important for gifted educators to understand and support the social and emotional development of gifted and talented children to support their achieving to their full potential. Gifted educators need to recognize that, although gifted children may have advanced cognitive function and may even possess a predisposition for heightened social and emotional development, their affective needs must be addressed in conjunction with their cognitive needs to ensure they reach their full learning potential. Given how interconnected affect and cognition are, general education teachers need to be prepared to address both in their classrooms. The following sections will address how gifted education is developed in the United States and also in Saudi Arabia, where the proposed study will take place.

Gifted Education in the United States

In the United States, gifted definitions and services differ by state according to each one's mandate regarding the provision of gifted education. The first federal definition of giftedness is that which was established in the Marland Report to Congress of 1972; this was later modified in the Jacob Javits Gifted and Talented Students Education Act of 1988 and subsequently in the No Child Left Behind Act of 2001 (Bhatt, 2011; Stephens & Karnes, 2000). However, even though the United States has a federal definition of giftedness, every state has the authority to determine its own definition of giftedness (NAGC & The Council of State Directors of Programs for the Gifted [CSDPG], 2015). In addition, every state has its own procedures for identifying and serving gifted students since there is no federal mandate for the identification or education of gifted and talented students; thus, it is up to each state to determine whether and to what extent the provision of gifted services will be supported in schools (Shaunessy, 2003). More positively, according to the latest "state of the states" report produced by the NAGC and the CSDPG for 2014-2015, the majority of states have specific provisions at the state level to provide gifted education to students in terms of policy, standards, identification, services, and/or funding (NAGC & CSDPG, 2015). This report examined 41 states and the District of Columbia.

The NAGC and CSDPG (2015) summary report pointed out that about half of U.S. states include multiple areas in their definitions of giftedness, including: (a) "intellectually gifted, (b) academically gifted, (c) performing/visual arts, (d) creatively gifted, (e) and/or specific academic areas" (p. 13). However, few states address in their definitions those students who are traditionally underrepresented in gifted programs, namely low-income students, those from diverse cultures and ethnicities, and twice-exceptional students – those students who are both gifted and have disabilities. Despite this drawback, it should be recognized that most states have

established mandates to identify gifted and talented students using multiple criteria models that include selective screening, achievement assessments, nominations, teacher rating scales, and student portfolios of outstanding work (Callahan et al., 2013; NAGC & CSDPG, 2015).

A recent evaluation of gifted programs in 765 school districts across the United States, indicated that gifted programs and services differ from state to state; and that most of the gifted programs offer differentiation, enrichment, and acceleration programming (Callahan et al., 2013, 2017). However, most of the states did not report having or adopting any particular framework to guide gifted programming in their districts; the few states that did report such practices noted that they had adopted a framework such as Tomlinson's (2001) differentiation model; Renzulli's Enrichment Triad Model (Callahan et al., 2017). Part-time and pull out classes were noted as the common practice of service delivery for elementary gifted programming; grouping in special classes is the common practice of service for middle school gifted students; and advanced placement was found to be the primary method used for gifted students in high school.

Gifted Education in Saudi Arabia

The Saudi Ministry of Education guides the education system in the country. It is responsible for establishing education policies and legislation related to the educational system. It also responsible for the hiring of teachers and the provision of educational services to all students, including gifted individuals; all schools in Saudi Arabia have the same curricula as set by the Saudi Ministry of Education. By the middle of the 20th century, Saudi Arabia had begun to focus on gifted education; this was also when educators and leaders began to recognize the needs of this population (Aljughaiman et al., 2009). In the 1960s, the Saudi Ministry of Education passed the first educational legislation that stated all gifted individuals have the right to receive gifted services to support their talents and abilities (Aljughaiman & Ayoub, 2012).

However, gifted services and programs were not developed in support of this legislation until 1990, when the Ministry of Education created the gifted program “Talents Search.” Then, the Ministry enacted legislation in 1996 to support three essential elements of gifted education in the country, including: (a) creating a theoretical framework that provides ways to serve and advocate for gifted individuals; (b) establishing a set of criteria to identify such individuals; and (c) the creation of curricula and activities that challenge and meet the needs of such students (Aljughaiman & Ayoub, 2012). Despite these improvements to the support of gifted education, it was not until 2002 that gifted services and programs began to emerge and be formally established in only some, and not all, public schools in the country (Alamiri, 2020).

The first definition of gifted students in the country was adopted from the 1972 Marland Report. Under that definition, Saudi treated gifted programs as alternative education for those Saudi children identified as gifted to be delivered in the general education classroom. The most current definition of giftedness as established by the Saudi Ministry of Education is:

Students who have unusual capabilities and skills or a distinguished performance from their peers in one or more areas that society appreciates, especially in the areas of mental excellence, creative thinking, educational attainment, special skills and abilities, and are in of need special educational care that does not correspond to them in the ordinary school curriculum. (Mawhiba, 1997)

In Saudi Arabia, the Ministry of Education and the King Abdulaziz and his Companions Foundation for Giftedness and Creativity (Mawhiba) are the only two educational organizations that foster gifted education (Aljughaiman & Ayoub, 2017). The Ministry issues legislation, regulations, and creates special gifted programs; the Mawhiba supports the delivery of gifted services to the whole country based on the Ministry’s guidelines. Saudi methods of gifted

identification criteria include: intelligence testing using the Wechsler Intelligence Scale for Children-Revised to Arabic; academic achievement scores; creativity testing using the Torrance Tests of Creative Thinking; a cognitive ability scale; and teacher's nomination (Alamiri, 2020).

The particular framework that guides gifted programming and practices in Saudi schools is based on three theories: (a) the Constructivism Theory, developed by Dewey in 1933 and continuously revised until 1998; (b) Sternberg's Triarchic Theory of Intelligence of 1985, and (c) Renzulli's 1986 Three Rings Theory of Giftedness. Gifted services in the country tend to be delivered in three ways: acceleration, ability grouping, and enrichment (Aljughaiman & Ayoub, 2017). In addition, while schools may utilize different strategies for gifted programs, they tend to only focus on science and math; thus, gifted and talented students whose potential is in other areas of intellectual excellence, such as the arts and music, are usually ignored (Alamer, 2014; Aljughaiman et al., 2009). Despite all the gifted education procedures and services that the Saudi Ministry of Education has directed should be provided to gifted students, these individuals still receive only the regular curriculum and are not exposed to more challenging material that is better suited to their abilities, even though different gifted scholars and theorists have argued for the importance of providing differentiated curriculum to gifted students (Alamer, 2014). In addition, the schools that do provide gifted services in Saudi Arabia, unfortunately give little attention to the social and emotional development of gifted students due to the limited preparation teachers receive on this unique aspect of gifted children and that schools have few counselors available (Alqarni, 2010).

Teachers' Attitudes Toward Gifted Education and Gifted Students

Teachers' beliefs and perceptions shape the kind of learning students receive and as a result impact learning outcome. Their perceptions of their students, as well as the biases they

may hold, shape how they educate students, this impacts student academic and cognitive development. The failure to address and meet the needs of gifted students by teachers may impact their academic and cognitive development (Hargreaves, 2001). Understanding the factors that influence teachers' perceptions can help to predict the degree of success they will have working with specialized student populations, including that of gifted learners (Perković Krijan & Borić, 2015). Therefore, it is critical to explore teachers' perceptions and understanding of gifted and talented students by synthesizing the findings of previous research. Researchers have investigated the topic of teachers' attitudes toward gifted students and gifted education for many years (e.g., Justman & Wrightstone, 1956; Peachman, 1942, as cited in McCoach & Siegle, 2007, p. 247). However, although many researchers have investigated the attitudes and perceptions of teachers regarding gifted students and gifted education in the United States and internationally, there have tended to be conflicting findings. Some research has found that general education teachers generally have positive attitudes toward gifted students (McCoach & Siegle, 2007; Watts, 2006), while other research has found that general education teachers have negative attitudes toward gifted students (e.g., Cramond & Martin, 1987; Geake & Gross, 2008) and still other studies have found mixed results in general education teacher attitudes (e.g., Carrington & Bailey, 2000; Lassig, 2009; Megay-Nespoli, 2001).

The source of such mixed results could be due to the different methodologies (e.g., qualitative, quantitative, and mixed methods research) employed by the researchers to identify trends and variables. Another contributing factor to this issue might be due to differences in gifted programs, educational systems, and teacher education across countries and the world. Chipeco (2004), for example, conducted a study that investigated the attitudes of 392 elementary school teachers in the United States toward gifted education and whether certain

variables--including interest in teaching gifted students, district commitment to serving gifted individuals, formal education, and having a gifted child--are predictive of their attitudes.

Chipeco (2004) concluded that negative or positive attitudes in teachers toward gifted and talented students are often a result of their attitudes toward the type of gifted services their schools provide. For example, in this Chipeco (2004) research it was found that acceleration was more supported by the study subjects as a method of accommodating gifted students than was differentiated instruction. This might possibly be due to the fact that differentiated instruction requires adjustments by the teacher in the general education classroom the gifted child is in that are appropriate for the child's ability, whereas when a gifted child is accelerated, there is no need to adjust the instruction.

Furthermore, another factor that might contribute to mixed results are the characteristics of the teachers themselves (e.g., years of experience, training). For example, Donerlson (2008) investigated the attitudes of 40 elementary school general education teachers and 30 elementary school gifted education teachers in urban school districts in the United States toward gifted students and their education. The researcher used a quantitative survey to determine whether there was a significant difference in the attitudes of the two groups. The results, employing descriptive and Pearson Moment Correlation Coefficients analyses, found significant differences between the teacher groups with regard to attitudes. Specifically, in this study of elementary school teachers, the general education teachers in the study were found to have fewer positive attitudes toward gifted students and their education, and this was perceived as related to their lack of experience and understanding of the needs of gifted individuals.

In another study, McCoach and Siegle (2007) surveyed 262 teachers who were randomly selected to explore their attitudes toward gifted students and gifted education, and to investigate

whether teachers would tailor their responses to fit what they perceived the researchers wanted to hear or to fit what they thought society expected them to say (subject bias). Additionally, the researchers investigated teachers' attitudes toward having training and experience in gifted and special education, as well as their self-perceptions of themselves as gifted or not (McCoach & Siegle, 2007). The teachers were found to be either extremely positive or extremely negative toward gifted education. However, teachers' perceptions of themselves regarding their own giftedness/non-giftedness were found to be unrelated to their attitudes toward gifted education. The results of this study led the researchers to conclude that teachers' may develop their attitudes toward gifted children based on the individual gifted student with whom they are working.

Teachers' Knowledge of the Affective Needs of Gifted Students

Educators have emphasized the importance of developing students' ability to cope, both socially and emotionally, alongside efforts to develop their academic skills (Buchanan et al., 2009). Gifted children who are well-adjusted socially and emotionally can better deal with challenging tasks, have more positive academic outcomes, have greater feelings of confidence and self-worth, are able to communicate effectively, and have more successful interpersonal relationships (Pahl & Barrett, 2007). Empirical studies have shown that often, teachers of the gifted are not aware of the psychological stress these individuals may be under because these students, even when they are struggling psychologically, tend to be high achievers (Whole Gifted Child Task Force, 2018).

Researchers who have investigated teachers' knowledge of the affective needs of the gifted individual have found that teachers who do not have enough knowledge regarding gifted children and their needs tend to hold negative attitudes toward these students – clearly, this can be detrimental to both their academic and affective growth (Baudson & Preckel, 2016;

Carrington & Bailey, 2000). For example, S. Gallagher et al. (2011) investigated the knowledge and understanding of 30 teachers at four different schools in a single educational region of Australia; four of the participants were gifted education teachers and the remaining participants were general education teachers. Specifically, this research examined understanding of gifted children's social and emotional development and the educational provisions the current schools of the study subjects offered. The researchers used a qualitative multi-site case study approach. Their findings were that teachers with insufficient knowledge and understanding of the social and emotional development of gifted students tend to focus more on potential classroom management concerns. However, teachers with personal experience of giftedness, such as those who stated they have gifted children in their own families, tend to be more supportive of gifted individuals and more knowledgeable about their social and emotional needs (S. Gallagher et al., 2011). Moreover, those educators with what was considered by the study to be a narrow view of gifted individuals' affective needs, tend to believe that parents should be responsible, more than schools/teachers, for meeting the social and emotional needs of their gifted children.

Another study, conducted by Moon and Brighton (2008), investigated the perceptions of U.S. K-2 public school teachers of young gifted and potentially gifted children. The researchers used a mixed methods approach that included a survey with open-ended questions. The results of their descriptive statistics analysis and cognitive maps analysis of 434 general education teachers showed that they generally had positive attitudes toward gifted individuals and identified more positive characteristics of giftedness than negative ones. In addition, Speirs Neumeister et al. (2007) conducted a quantitative study using open-ended questions with 27 fourth-grade teachers working with gifted students who were considered members of an under-represented group in gifted identification (e.g., low socio-economic status). The teachers were asked to state their own

definition of giftedness and to describe the typical characteristics and behavior of gifted children by sharing stories of the students they had worked with. The responses to the survey used inductive approach. The study found that when teachers had less understanding of giftedness and were not aware of the effect of environmental or cultural factors on these students, such as the challenges presented by coming from a low-income family, the learning of the gifted students could be adversely affected. In other words, while most of the teachers could identify positive characteristics associated with giftedness, their inability to identify affective characteristics that could lead to issues for students (e.g., maladaptive perfectionism, emotional intensity) was cause for concern (Speirs Neumeister et al., 2007).

Factors That Predict Teachers' Attitudes

Previous research on teachers' attitudes toward gifted students and their education have predicted that different factors may play a critical role in these attitudes. These factors include training in gifted education, self-rated as gifted or not, and previous working or teaching experience in gifted education. The following sections will describe each of these factors.

Training in Gifted Education

Previous research has indicated that one of the first predictors of teachers' attitudes toward gifted students and gifted education is the amount and type of training the teachers have received in the field (Chipego, 2004; Donerlson, 2008; Lassig, 2003). Training general education teachers in gifted education can provide those who work with gifted students some understanding of the characteristics and needs of gifted students, which results in the teachers being better able to serve these students in the classrooms (J. J. Gallagher, 2000). Research has shown that teachers with pre-service and in-service training in gifted education have greater understanding of giftedness and gifted education, which results in their tending to have positive

attitudes toward gifted students as well as improved confidence in their own ability to meet the needs of gifted students (Bangel et al., 2010; Berman et al., 2012; Lassig, 2009). Training in gifted education not only influences teachers' attitudes toward the gifted individual, it also enhances their ability and skill in the general education classroom to the benefit of all of their students, whether or not they are identified as gifted (Plunkett, 2000). This is due to the range of instruction techniques, including differentiated instruction, which are emphasized in gifted education training. In-service teachers with training in gifted education perceive each gifted student as a unique individual with different needs and interests, because most training in gifted education supports and emphasizes this important fact (Bangel et al., 2010; Hanninen, 1988).

Miller (2009) conducted a quantitative survey study to investigate and compare in-service general education teachers' beliefs and attitudes toward giftedness as related to their hours of training in gifted education. This study involved a total of 60 teachers from five different school districts in urban and suburban areas of the United States. 21 of the teachers had 12 or more hours of gifted education coursework and the remainder ($n = 39$) had either fewer than 12 hours or no hours of such coursework. The results were analyzed using descriptive and inferential statistics, and the findings were that the more hours of coursework in-service teachers have in gifted education, the more inclusive a conception of giftedness they have. This in turn results in a more positive attitude toward gifted students, as compared to the less inclusive conceptions and less positive attitudes of their peers with fewer hours of coursework toward these students. While a number of previous studies have found a relationship between teachers' in-service training in gifted education and their attitudes, there is still no definitive research that has found this is always the case.

Self-Rating as Gifted or Not

Bégin and Gagné (1994) conducted an extensive review of over 30 studies that examined predictors of attitudes toward gifted education and giftedness; they identified different predictive factors, one of which was whether an individual self-rates as gifted or not. Specifically, teachers who rated themselves as gifted were found to have positive attitudes toward gifted students (Bégin & Gagné, 1994). Similarly, Chipeco (2004) conducted a quantitative study in the United States to investigate factors that may predict teachers' attitudes toward gifted education. The participants were 392 general education teachers. The findings of this research, which involved a multiple regression analysis of the collected data, indicated that teachers who rate themselves as gifted have more positive attitudes toward the gifted. The researchers concluded that self-rating as gifted or not can predict a teacher's attitudes toward gifted education and giftedness.

However, in their survey of 262 teachers, McCoach and Siegle (2007) found no such relationship. This research involved a randomly selected pool established to explore teachers' attitudes toward gifted students and gifted education. The results of a correlational analysis of the data found no relationship between teachers' self-perception as gifted or not and the teachers' attitudes toward gifted education and students (McCoach & Siegle, 2007).

Experience in Gifted Education and With Gifted Students

Another factor believed to impact teachers' attitudes toward gifted students and gifted education is the years of experience general education teachers have working with and teaching gifted students (Bégin & Gagné, 1994). McCoach and Siegle (2007), during their examination of possible predictors of teachers' attitudes with their survey of 262 teachers, also examined this factor. This study involved a predominately White (86.5%) pool of respondents, where the remaining teachers who participated identified themselves as Latino/Latina (4.6%) or Black

(4.2% African American). The teachers were found to have an average of 16 years in teaching. Almost three-fourths of the teachers stated that gifted education was offered at the school at which they worked. However, while this number is heartening, this means that over a quarter of the schools these respondents worked at (26%) did not offer such programs. To analyze the data, McCoach and Siegle (2007) utilized multivariate t-test and found that the teachers with previous experience with gifted education (e.g., years of having gifted students in the classroom or a degree/certificate in gifted education), had more positive attitudes toward the gifted than those who did not possess such experience. Researchers have also indicated that teachers with experience in gifted education are more supportive and knowledgeable of gifted programming and services, such as identification procedures (Brown et al., 2005; Schroth & Helfer, 2009). For example, Brown et al. (2005) surveyed a national sample of 2,918 general education teachers, gifted education teachers, administrators, and consultants, regarding gifted identification strategies that they support. This research, which employed multivariate analysis of variance procedure (MANOVA), indicated that each different group including teachers with more years of experience teaching or working with the gifted students tended to feel that it was important to employ a diversity of identification methods, stating that this group “favored the use of individual expression criteria, ongoing assessment, multiple criteria for identification, and consideration of contextual factors” (Brown et al., 2005, p. 76).

Similarly, Russell (2018) investigated the attitudes and perceptions of high school teachers toward giftedness and gifted education in a suburban school district located in Texas. The researcher collected and analyzed the data with two groups of teachers ($N = 20$) in two phases: open-ended survey with a sample of seven teachers; and interviews with a sample of 13 teachers. The teachers had a very broad range of years in teaching (1-31 years of experience);

and about one-third of the subjects ($n = 4$) stated that as children, they had been identified as gifted. Only one of the participants stated that they were certified by the state in gifted education. The data were analyzed using a grounded theory methodology. Russell found that when teachers had personal experience with giftedness, such as being identified as gifted, having training in teaching the gifted, and/or having experience in teaching the gifted, the teachers were more supportive of gifted education and had more positive attitudes toward gifted individuals.

Summary

This review of the literature examined how research has established that gifted children differ from their typical peers not just in abilities but in needs. They require special services and learning opportunities to foster their cognitive and affective development so they can perform to their highest potential and ability. Failing to meet these needs, especially in schools and classrooms, may negatively impact the educational trajectories of these individuals. Educators must be mindful of the needs of the gifted individual to help them become high-functioning and successful adults in the future (Battistich et al., 1999). Teachers play a critical role in the development and support of gifted students' needs. Therefore, teachers need to be able to recognize the affective and academic characteristics of gifted children to be able to provide them with appropriate services and instruction to meet their abilities and needs. Previous research has shown that often teachers of the gifted are not aware of the psychological stress these individuals may be under, possibly because these students, even when they are struggling psychologically, tend to be high achievers.

Teachers' attitudes toward their students, as well as the biases they hold, shape how they interact and educate students. As a result, these traits of teachers may impact the academic and cognitive development of their students. The research has shown that teachers' positive attitudes

toward gifted students and knowledge of gifted education influence the way they interact with the gifted and the manner in which they deliver gifted education and services. However, as shown by the literature review of this study, there is a gap in the research regarding the attitudes and perception of teachers toward the gifted in Saudi Arabia, as well as how these attitudes and perception might impact gifted students. Therefore, this study examined the attitudes and perception of this population as a first step in determining how to provide teachers with the appropriate training and professional development that will allow them to best work with and support their gifted students in reaching their full potential.

CHAPTER III

METHODOLOGY

Introduction

Governments around the world, including that of Saudi Arabia, have recognized the need to provide gifted programs and curriculum in every public-school setting in order to meet the learning needs of gifted students. Research demonstrates the importance of developing the cognitive and affective needs of gifted students (Brigandi et al., 2018; Coleman & Cross, 2014; Geake & Gross, 2008; Peterson, 2015; Rinn & Bishop, 2015). However, although research suggests teachers' attitudes toward and perceptions of gifted education and individuals is a key factor in the success of the delivery of gifted services and the development of the potential of gifted students (Baudson & Preckel, 2016; Carrington & Bailey, 2000; Scott, 2000), it is not clear that Saudi teachers comprehend this important fact. Therefore, this research study investigated Saudi general elementary education teachers' attitudes toward gifted students and their education. In addition, it explored Saudi general education elementary school teachers' perceptions of the affective needs of gifted students. The following research questions guided this study:

- Q1 What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?
- Q2 What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?
- Q3 What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?

Research Design

Method

To answer the research questions, a cross-sectional survey design was used to collect the data for the study. This design included a quantitative component using “objective measurement to gather numeric data” (Ary et al., 2010, p. 22), to obtain data on teachers’ attitudes toward gifted students and their education, along with open-ended questions that were used to describe the respondents’ perceptions of the social and emotional needs of gifted students. Leedy and Ormrod (2001) explained that the intent of quantitative research is to “establish, confirm, or validate relationship[s]” and to develop generalizations to other persons and places (p. 102). There are two different categories of this type of research: experimental and nonexperimental (Ary et al., 2010). Experimental research typically involves “the effect of the systematic manipulation of one variable” (the independent variable) “on another variable” (the dependent variable); whereas, in nonexperimental research, “the researcher identifie[s] variables and look[s] for relationship[s] among them but does not manipulate the variables” (Ary et al., 2010, p. 26). Since this study did not control for or manipulate any variables or involve randomization, it is considered non-experimental research. The primary independent variables for this study were number of years’ experience teaching/working with gifted students, type of training in gifted education, having a gifted child or a gifted family member, and self-rating as gifted or not gifted. The primary measure used as a dependent variable was teachers’ attitudes.

Since this research study sought to describe the current attitudes and perception Saudi general education teachers have toward giftedness and gifted education, a descriptive design was employed. Creswell (2014) stated that this design is appropriate when there is limited information about the specific topic that has been identified by a researcher for examination.

Thus, a descriptive design was chosen for this work because, as established by the literature review, there is not much existing research on the factors to be studied. In this type of study, researchers “use instruments such as questionnaires to collect information from groups of individuals” (Ary et al., 2010, p. 28). A survey was used to gather information from the study population at a single point in time (Williams, 2007). More specifically, this study utilized a cross-sectional survey to answer the research questions. Cross-sectional survey research design provides researchers with a quantitative or numeric description of “trends, attitudes, or opinion of a population by studying a sample of that population” (Creswell, 2014, p. 255). The survey also involved four open-ended items for the participants to address. These items gathered information regarding the participants’ perception of the social and emotional needs of gifted students.

Setting

The study took place in Saudi Arabia, where the Ministry of Education is responsible for the hiring of teachers and the establishment of schools and the curriculum. According to the 2017 report of the country’s General Authority for Statistics, there were a total of 12,665 elementary schools (segregated by gender) as of 2016. The report also indicated there were 3,678,391 students enrolled in these schools for the same year. While no specific number of elementary school teachers was provided, the total number of teachers across all school levels (elementary, middle, and high school) in the country was stated to be 525,615 (General Authority for Statistics, 2017). This figure included teachers in the areas of general, special, and gifted education. Participants for this research were drawn from the cities of: Riyadh, Qassim, Medina, and Hail. These cities were chosen due to time constraints and researcher accessibility.

Participants

Sampling and Selection Criteria

The target population for this study was male and female elementary school general education teachers in Saudi Arabia who teach in the cities of Riyadh, Qassim, Medina, and/or Hail. The non-probability sampling method that I used to select participants for the study was convenience sampling. In this method, research can select a sample of the population that is easy to access and that meets certain practical criteria the researcher has identified (Etikan et al., 2016). Three selection criteria were utilized for this study: (a) that the teachers were elementary school general education teachers who teach in at least one of the four cities, (b) that the teachers had at least one year of teaching experience, and (c) that they were full-time teachers. Retired teachers, international contractor teachers, special education teachers, gifted education teachers, middle and high school teachers who do not also teach elementary school, and school administrators were excluded from the study. A statistical power analysis using G*Power (ver. 3.1) was conducted to determine the minimum sample size needed for the study. Statistical power is an important consideration for researchers when first starting to plan out a study (Duffy, 2006). It involves determining the appropriate and adequate number of individuals to include in the subject pool. To obtain this number, one must figure out how many subjects are necessary to achieve a significant effect and to minimize the risk of a Type I or Type II error (Duffy, 2006; Sullivan & Feinn, 2012).

For this study, it was determined--using G*Power--that the minimum number of respondents necessary for the study was 92 participants. An effect size (ES) of 0.15 was established by using G*Power to determine that medium ES was most appropriate given that there is no information provided in the literature about the standard population size for the

proposed study's ES (Dybå et al., 2006). In addition, an alpha of 0.05 and a power of 0.80 were utilized. The study sample of participants was, therefore, determined to require a minimum of 92 elementary school general education teachers, according to the G*Power recommendation. The final sample size for the study was 141 teachers. Participation in the study was voluntary. Of these 141, five were found to teach outside of the four specified cities. The responses of these individuals are included in the data analysis, but their responses were excluded from the multiple regression analysis because there were not enough observations to run the test.

Characteristics

Participants demographic characteristics were collected using the first section of the study survey that was distributed online to elementary general education teachers in the four cities of Saudi Arabia (i.e., Riyadh, Qassim, Medina, and Hail). A short demographic questionnaire was included in the survey for the respondents to provide data concerning personal and professional information, including: (a) gender, (b) city/cities where they teach, (c) total number of years teaching the general education curriculum, (d) total number of years of experience with gifted students, (e) whether they have a gifted child or gifted family member, (f) type of training in gifted education, and (g) whether they self-rate as gifted or not gifted.

The sample size for the study comprised 141 general elementary school teachers, of whom 60.2% ($n = 85$) were male and 39.7% ($n = 56$) were female. Table 1 presents a frequency distribution of the respondents' gender. Table 2 presents the geographical distribution of where the respondents teach elementary school, which is: (a) in Riyadh ($n = 39$), (b) in Medina ($n = 19$), (c) in Qassim ($n = 56$), (d) in Hail ($n = 22$), and (e) from school districts outside of the target sample area $n = 5$).

Table 1

Frequency and Percentage of Gender

Gender	<i>N</i>	%	Valid %
Male	85	60.28	60.28
Female	56	39.72	39.72
Total	141	100.00	100.00

Note. The total % may be slightly more/less than 100.00 due to rounding.

Table 2

Frequency and Percentage of School Location

Gender	<i>N</i>	%	Valid %
Riyadh	39	27.66	27.66
Medina	19	13.48	13.48
Qassim	56	39.72	39.72
Hail	22	15.60	15.60
Other Locations	5	3.55	3.55

Note. The total % may be slightly more/less than 100.00 due to rounding.

Table 3 shows the frequency distribution of the responses regarding total number of years teaching the general education curriculum. The largest number of respondents (31.21%, $n = 44$) reported having from 6-10 years of teaching experience. Thirty-nine of the respondents (27.66%) had more than 16 years of teaching experience. Thirty-four (24.11%) of the respondents had between 11 and 15 years of teaching experience. Finally, 24 (17.02%) of the respondents had between 1 and 5 years of teaching experience.

Table 3

Frequency and Percentage of Years of Overall Teaching Experience

Years	<i>N</i>	%	Valid %
1-5	24	17.02	17.02
6-10	44	31.21	31.21
11-15	34	24.11	24.11
16+	39	27.66	27.66
Total	141	100.00	100.00

Next, Table 4 shows the frequency distribution regarding experience teaching/working with gifted students. Fifty (35.46%) of the respondents had experience teaching/working with gifted students. However, the majority ($n = 91$; 64.54%) of the respondents indicated that they had no experience teaching/working with gifted students in their classrooms. Most of the respondents who indicated teaching/working with gifted students explained that their work was as general education classroom teachers, while others indicated that their experience involved working as a member of the school's gifted team that organizes classroom activities for the gifted. One teacher indicated their work was as the director of the gifted program in their school, however, this did not exclude them from the study because they did not have any license in gifted education. It is common to find this situation in Saudi Arabia, due to the limited number of qualified gifted education professionals, where such positions are routinely held by individuals who are not highly qualified in gifted education. A small number ($n = 5$) of the participants indicated their work involved gifted identification procedures, namely nominating gifted children for gifted programs. The respondents' years of experience teaching/working with gifted students were as follows: (a) 41 (29.78%) had between 1 and 5 years working with gifted students; (b) 4

(2.83%) had between 6 and 10 years working with gifted students; and (c) 5 (3.54%) of the respondents reporting having 16 and more years of working with gifted students.

Table 4

<i>Frequency and Percentage of Experience Teaching/Working with the Gifted</i>			
Yes/No	<i>N</i>	%	Valid %
Yes	50	35.46	35.46
No	91	64.54	64.54
Total	141	100.00	100.00

The frequency distribution of the responses regarding whether a respondent had a gifted child or family member are presented on Table 5. Forty-six of the respondents (32.62%) indicated having a gifted child or family member. Conversely, 95 of the respondents (67.38%) stated they did not have a gifted child or family member. Those who indicated such a relationship stated that the gifted individual's gifts were in math and/or science; whereas others stated that the area of giftedness was athletics, the arts, and/or music.

Table 5

<i>Frequency and Percentage of Having a Gifted Child/Family Member</i>			
Yes/No	<i>N</i>	%	Valid %
Yes	46	32.62	32.62
No	95	67.38	67.38
Total	141	100.00	100.00

Table 6 presents the frequency distribution of the responses regarding receiving training in gifted education. The respondents had the option of choosing more than one of the choices

presented. Thirty-eight of the respondents (26.95%) indicated that they had received training in gifted education; the majority ($n = 103$; 73.05%) stated that they had no training in gifted education. The highest number of respondents with training in gifted education were from the Riyadh school district ($n = 18$), followed by Qassim ($n = 11$), Medina ($n = 6$), and Hail ($n = 3$). The respondents who had received training indicated the following areas as their source of that training: (a) 22.70% ($n = 32$) had attended a training or workshop that was provided by their school district; (b) 4.26% ($n = 6$) had attended a training or workshop conducted outside of their school district; (c) 2.13% ($n = 3$) had obtained training from outside resources, such as Internet workshops; and (d) 2.13% ($n = 3$) had obtained training through a course in their undergraduate program. Table 7 presents the frequency distribution of the responses based on the type of training received.

Table 6

Frequency and Distribution of Training in Gifted Education

Yes/No	<i>N</i>	%	Valid %
Yes	38	26.95	26.95
No	103	73.05	73.05
Total	141	100.00	100.00

Table 7

Frequency and Distribution of Type of Training in Gifted Education

Type of Training	<i>N</i>	%
College Course as Part of Education Degree	3	2.13
Professional Development Offered by School District	32	22.70
Professional Development Offered Outside of School District	6	4.26
Other Resource	3	2.13
Total	44	31.22

Note. Respondents could indicate more than one source for the type of training.

Finally, the responses regarding whether a respondent self-rates as gifted or not gifted are shown on Table 8. Fifty-two (36.88%) of the respondents self-rated as gifted; and 89 (63.12%) stated they do not consider themselves gifted. Those who self-identified as gifted chose the label based on their ability in math, leadership, problem-solving, and/or teaching accomplishment. Only one respondent indicated they had been identified as gifted while in school. Those who did not self-identify as gifted stated they based this on the belief that they do not have high intelligence scores and/or had not been identified as gifted while in school.

Table 8

Frequency and Percentage of Self-Rated as Gifted

Yes/No	<i>N</i>	%	Valid %
Yes	52	36.88	36.88
No	89	63.12	63.12
Total	141	100.00	100.00

Instrumentation

As noted, a cross-sectional survey was used to collect the data, which included survey scales and open-ended items (see Appendices A, B, and C). The data collected included information on demographic characteristics of the respondents and their attitudes toward and perceptions of giftedness and gifted education. Studies have established that such instruments are an effective method of collecting information when the intent of the research is to measure different characteristics, such as knowledge, attitudes, beliefs, or perceptions (Creswell, 2014; Johnson & Christensen, 2019).

The questionnaire used in this study had three sections: (a) demographic questions, (b) items to obtain information on participants' opinions of gifted education and their attitudes toward gifted students, and (c) open-ended items to obtain information on participants' perceptions of the social and emotional needs of gifted students. To provide the respondents with some guidelines and overview, the Saudi definition of giftedness was included before the demographic questions section. This was deemed especially important given that the target sample comprised elementary school general education teachers who may or may not have had gifted students in their classrooms. The following describes each section of the survey.

Section I: Demographic Questions

The first section of the survey included eight questions to obtain demographic data on the participants. Data were gathered from each respondent regarding: (a) gender, (b) city or cities where the person teaches, (c) the university or the college where their degree was obtained, (d) total number of years teaching the general education curriculum, (e) total number of years of experience with gifted students, (f) whether they have a gifted child or gifted family member, (g) type of training--if any--in gifted education, and (h) whether the respondent self-rates as gifted or not gifted. These questions were designed to determine what variables, if any, were associated with teachers' attitudes about gifted students, gifted education, and their knowledge of the social and emotional needs of the gifted. All of these questions were categorical, meaning: (a) when asking about number of years in an area, the categories the respondents were offered were: 1-5, 6-10, 11-15, and 16 and more; (b) when asked about type of training in gifted education, the categories offered included: university courses, professional development, and other sources; and (c) in the gender category, the options were male or female. Some of the demographic questions included a "please explain" component. The last demographic question asked the respondents to indicate whether they self-rate as gifted or not (yes/no) and included an open-ended component that asked the respondent to explain why they answered as they did (a space was provided where the individual could fill in their response).

Section II: Teachers' Attitudes Toward Gifted Students and Gifted Education

The second section of the survey was adapted from Gagné and Nadeau's (Gagné, 1991) attitude scale, "Opinions About the Gifted and Their Education," which contains a 34-item questionnaire. This survey was originally developed to investigate the opinions of French-

speaking teachers in Canada toward the gifted. The authors have encouraged the validation of scores from the instrument in English-speaking countries (Gagné, 1991; Gagné & Nadeau, 1985). The original scale has 34 items in the survey that are grouped, interpreted, and analyzed to measure attitudes of pre-service teachers using 6 subscales relating to gifted education: (a) the support and needs of gifted children (e.g., Item 1: Our schools should offer special education services for the gifted.); (b) social value (e.g., Item 13: Gifted persons are valuable resources for our society.); (c) rejection of gifted children (e.g., Item 22: Some teachers feel their authority threatened by gifted children.); (d) level of opposition (e.g., Item 3: Special programs for gifted children have the drawback of creating elitism.); (e) ability grouping (e.g., Item 2: The best way to meet the needs of the gifted is to put them in special classes.); and (f) school acceleration (e.g., Item 10: Children who skip a grade are usually pressured to do so by their parents.). The survey employs a 7-point Likert scale that asks the respondent to indicate level of agreement with each statement, where the range is from “strongly disagree” to “strongly agree.” High or low scores on these subscales determine the participants’ attitudes as being positive or negative (Bégin & Gagné, 1994; Gagné, 1991).

The reliability and validity of the Gagné and Nadeau scale has been well-established and examined in the literature across cultures, including: (a) in the United States by McCoach and Siegle (2007) and Troxclair (2013); (b) in Australia by Lassig (2009); and (c) in Greece by Polyzopoulou et al. (2014). Furthermore, McCoach and Siegle (2007) conducted additional statistical tests to confirm the validity of the original questionnaire using the multivariate software EQS 6.1; they then reported the reliability of the items. They also reorganized the 34 items in the original test into four new subscales, including: Support (Cronbach’s alpha = .76), Elitism (Cronbach’s alpha = .80), Acceleration (Cronbach’s alpha = .71), and Perception

(Cronbach's $\alpha = .94$). Gagné and Nadeau recommended using mean scores instead of total scores due to their more direct relationship with the Likert-scale descriptors; they added that the mean scores can take the values of 1.0 to 5.0, where mean scores under 2.0 indicate a very negative attitude and mean scores above 4.0 indicate a very positive attitude. This is the recommendation that was employed for this study. Specifically, to answer the research questions, this study used a 5-point Likert scale, as this has been the practice of most of the studies that adapted the survey (e.g., Chipeco, 2004; Troxclair, 2013). In addition, this study used the original questionnaire with the six subscales.

Section III: Open-Ended Items

The last section of the survey included four open-ended statements to which the participants were asked to respond. These items gathered information regarding the participants' perceptions of the social and emotional needs of gifted students. In particular, these items obtained information on such things as whether the participants believe gifted students have any specific or unique social and emotional needs. These items specified that the respondents present their answers based on their existing knowledge of gifted students. An example of these items was: "Please describe, in your opinion, what is the typical gifted student." Another was: "Please describe any unique social and emotional needs that you believe gifted students possess."

Translating the Instrument

The survey, which was originally developed in English, was translated into Arabic by the researcher; and several steps were taken to ensure the validity of the translation. First, the translation was reviewed with a university faculty member and a general education teacher who are both bilingual in English and Arabic. The professor has published several articles in the field of gifted education and the teacher has taught English language at the elementary school level for

nine years. They were both asked to check the translated version and compare it with the original. Following the review from these individuals, the translated version was discussed with two Saudi teachers who belong to the same population as that of the proposed study sample-- Saudi elementary school general education teachers--but who would not be participating in the proposed study, to ensure the validity of the content of the translated instrument. This process resulted in a change in Item 26 (Taxpayers should not have to pay for special education for the minority of children who are gifted), because the reviewers stated that it might not be clear due to the fact that taxation of income in Saudi Arabia only began in 2018 and, therefore, it might not be clear at this point to Saudi teachers whether these tax monies are spent on the Saudi Education system. Therefore, the item was rephrased as: "The Saudi government should not have to pay for special education for the minority of children who are gifted." The recruitment letters were translated into Arabic by the researcher and the English teacher validated the translation.

Piloting the Instrument

Since the original instrument was developed in English and was translated to Arabic, a pilot study of the translated instrument was conducted with seven teachers in Saudi Arabia to strengthen the translation and ensure the appropriateness of each item's content validity and clarity of expression. This pilot study was also used to confirm that the content of the instrument was in keeping with the Saudi culture. The seven teachers were asked to answer the survey questions and give feedback about the written questions to help strengthen the items on the instrument. They were asked: (a) "Do you understand the questions/items?"; (b) Is the context of the questions/items clear?; (c) Do the questions fit the Arabic cultural context?; and (d) How long did it take you to complete the whole questionnaire?". The teachers who were asked to participate in the pilot study were not gifted education teachers nor had they had any coursework

in gifted education. The reason for these criteria was to ensure that those who participated in the pilot study conformed to the characteristics of the target population for the survey, which was general education teachers who may or may not have any background in gifted education.

All of the teachers agreed that the questions fit the Saudi Arabian culture. However, the pilot study participants noted that the word “elitism” in Item 4 (Special programs for gifted children have the drawback of creating elitism) should be defined to make it clear to the intended respondents, as this word is not commonly used in the Arabic spoken language. In addition, three of the pilot study participants suggested rewriting the second statement in the open-ended section (Please describe any social and emotional traits that you feel are unique to gifted students) to include a reference to positive and negative traits, in order to make it clearer to the survey respondents; thus, this item was revised to: Please describe any positive and negative social and emotional traits that you feel are unique to gifted students. The pilot study reviewers indicated that the average time spent in completing the survey was approximately 12 minutes.

Data Collection Procedures

The data were collected via Qualtrics. Prior to data collection, the researcher obtained Institutional Review Board (IRB) approval from the University of Northern Colorado (see Appendix D). After receiving this approval, the researcher contacted the Saudi Ministry of Education to obtain permission and a letter of support to conduct the study (see Appendices E and F). After receiving approval and the letter, the researcher contacted the general education coordinators in the Riyadh, Qassim, Medina, and Hail school districts in Saudi Arabia through their official emails and phone numbers (see Appendices G and H). In the communication with the general education coordinators, it was requested that the lists of contact information for the general education teachers in their districts, but this was denied due to privacy concerns.

However, the coordinators agreed to distribute the survey on the researcher's behalf. Therefore, they were provided the Saudi Ministry of Education's approval letter, the teachers' recruitment letter, and the survey (see Appendices G, I, and J). The teachers' recruitment letter included the following: an invitation to participate in the study, the purpose of the study, the significance of the study to the Saudi education system, and a link to the survey. A phone call as well as a follow-up reminder email was sent to the coordinators two weeks after the first request, to increase the response rate.

Participant consent was built into the survey. After reading the consent form and indicating their willingness to participate by clicking, "Yes, I have read the consent form and I consent to participate in the survey," the respondent was then able to proceed with the survey. The data collected were kept confidential: individual responses were not identified, and the data were stored in a password protected electronic file. Only the researcher and the research advisors were allowed to access the data. To maintain confidentiality, the survey did not ask for respondents' names or other identifiers (e.g., school name). All results were reported in whole group form and not disaggregated by region, to protect the confidentiality and privacy of the individual participants.

Data Analysis Procedures

The survey was used to gather data on the relationship between dependent variables (i.e., attitudes) and select independent variables (i.e., experience teaching/working with gifted students, type of training in gifted education, having a gifted child or gifted family member, and self-rating as gifted or not gifted), as these factors have been identified by the research as potential predictors of teachers' attitudes regarding giftedness and gifted education. After collecting the responses, the data from all the items--except those that were open-ended--were

entered into a special software application that supports the analysis of quantitative data. Statistical Package for Social Sciences (SPSS) software was used to analyze the data, using descriptive statistics and inferential statistics methods to answer the first and second research questions. A qualitative thematic analysis was used for the open-ended items, to answer the third research question regarding teachers' perceptions of the social and emotional needs of gifted students. The data obtained from these items were manually reviewed and then coded into themes and subtheme using inductive approach analysis.

Descriptive Statistical Analysis

The mean and standard deviation of the teachers' responses, including the five participants who were outside of the study target sample, were calculated to answer the first research question ("What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?"). The reason the responses of the five respondents from outside of the targeted four school districts were retained was to see if there was a difference in attitudes and perceptions related to their different geographical area. Descriptive statistical analysis was used to determine Saudi general education teachers' attitudes toward gifted students and gifted education. The teachers' mean scores in the six subscales (i.e., Needs and Support, Level of Opposition, Rejection of Gifted Children, Social Value, Ability Grouping, and School Acceleration), were compared with mean cutoffs as defined by Gagné (1991). The six subscales were categorized as positive or negative subscales. Since the school acceleration subscale contained a mix of positive and negative attitude statements, for this study the two positive items were reverse-coded to ensure all of the items reflected negative attitudes for the analysis; thus, this subscale became negative. This decision aligns with the practice of McCoach and Siegle (2007), who reverse-coded the positive items in the School Acceleration subscale to

ensure that when the responses to the items in the subscale were analyzed, the mean scores could all be classified in terms of negative attitude. High scores on the positive subscales (i.e., Needs and Support, Social Value, and Ability Grouping) indicated positive attitudes toward the gifted, whereas high scores on the negative subscales (i.e., Level of Opposition, Rejection of Gifted Children, and School Acceleration) indicated negative attitudes toward the gifted. Therefore, for the current study, the following cutoffs were employed. For subscales that represented positive attitudes toward the gifted, the following mean cutoffs were used: (a) mean scores between 4.0 to 5.0 were classified as highly positive; (b) mean scores between 3.24 to 3.99 were classified as positive; (c) mean scores between 2.75 to 3.23 were classified as ambivalent; (d) mean scores from 2.00 to 2.74 were classified as negative; and (e) mean scores of 1.99 and under were classified as highly negative. For subscales that represented negative attitudes toward the gifted, the following mean cutoffs were used: (a) mean scores between 4.0 to 5.0 were classified as highly negative; (b) mean scores between 3.24 to 3.99 were classified as negative; (c) mean scores between 2.75 to 3.23 were classified as ambivalent; (d) mean scores from 2.00 to 2.74 were classified as positive; and (e) mean scores of 1.99 and under were classified as highly positive.

Multiple Regression Analysis

For the second research question (“What factors predict Saudi elementary school general education teachers’ attitudes toward gifted students and their education in Saudi Arabia?”), multiple regression was used. Multiple regression is a correlation procedure that can be utilized to examine the relationship between different variables; it is particularly useful for investigations where independent variables can significantly predict dependent variables (Pituch & Stevens, 2015). The development of a multiple regression model requires that the variables be measured

on an interval scale (Ary et al., 2010). In other words, the variables must be numerical in order to be analyzed. Thus, since this study used categorical variables, these variables were converted to binary variables or “dummy variables” (DeCoster, 2007), which are used in regression as an “artificial variable to represent an attribute with two or more categories/levels” (Skrivanek, 2009, p. 1). The assumptions of multiple regression were inspected before starting to analyze and answer the second question; these were: (a) normality of residuals, where the multivariate of scores of the variables are normally distributed; (b) linearity, where there is a linear relationship between independent and dependent variables; (c) homoscedasticity, where variance in variables are equal; (d) multicollinearity assumption, where there is relationship between the independent variables; and (e) independence of residuals, where the residuals are independent. The multiple linear regression was conducted to investigate the relationship between the dependent variable of Saudi general education teachers’ attitudes toward giftedness and gifted education (i.e., individual mean scores from the subscales in the Likert scale responses and the predictor variables (i.e., type of training in gifted education, years of experience teaching/working with the gifted, having a gifted child or a gifted family member, and self-perception as gifted or not gifted).

Inductive Approach Analysis

For the third research question (“What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?”), an inductive approach analysis was used. It was used to analyze teachers’ responses to the survey’s open-ended items, which obtained information about their ideas about the social and emotional needs of the gifted. The teachers’ responses were manually reviewed and were read several times until consistent categories and/or subcategories were identified; next, they were

organized into potential themes and/or subthemes. In addition, a peer reviewer reviewed the raw data; differences in coding decisions were resolved and final themes were then organized and labeled. Finally, the percentages of teacher responses that fell under each theme were determined and stated.

Overview of the Methodology

The current study investigated Saudi general education elementary school teachers' attitudes and perceptions regarding giftedness and gifted education. The participants were recruited from the cities of Riyadh, Qassim, Medina, and Hail. A quantitative study design employing "objective measurement to gather numeric data that are used to answer questions" (Ary et al., 2010, p. 22) was utilized to answer the research questions. A descriptive research design was employed to describe the current attitudes and knowledge Saudi general education elementary school teachers have toward giftedness and gifted education. Creswell (2014) stated that this design is appropriate when there is limited information in the literature regarding the specific topic that has been identified by the researcher for examination. The data collection method was a survey, because such instruments provide the researcher with a quantitative or numeric description of "trends, attitudes, or opinions of a population by studying a sample of that population" (Creswell, 2014, p. 255). Specifically, this study utilized a cross-sectional survey, where the data were collected at one point in time, to answer the research questions.

Participants in the study were directed to an electronic survey where their responses were used to gather information from the study population at a single point in time (Williams, 2007). The initial target sample size was 92 general education teachers as determined by G*Power software ver. 3.1; this study exceeded this G*Power sample size recommendation with a final size of 141 teachers. The survey included four sections: (a) the consent form, (b) demographic

questions, (c) items on respondents' opinions of gifted education and items on respondents' attitudes toward gifted students, and (d) open-ended items on respondents' perception of the social and emotional needs of gifted individuals. The data from the responses to the items in the second and third sections of the survey were analyzed using Statistical Package for Social Sciences (SPSS) software. A descriptive statistical analysis and multiple regression analysis were used to answer the first and second research questions. Finally, a qualitative thematic analysis was employed to answer the third research question.

CHAPTER IV

RESULTS

This chapter presents the findings of this research study. The purpose of this study was to investigate Saudi Arabian general education elementary school teachers' attitudes toward gifted students and their education. Additionally, this study aimed to explore this population's perceptions of the affective (social and emotional) needs of gifted students. The collected data were analyzed using both quantitative and qualitative approaches. Statistical Package for Social Sciences (SPSS) ver. 23 was used to analyze the collected quantitative data, using descriptive and inferential statistical methods. The qualitative data were analyzed thematically, using an inductive approach. The research questions that guided this study were:

- Q1 What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?
- Q2 What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?
- Q3 What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?

Descriptive Statistical Analysis

The study sample was planned to consist only of general education elementary school teachers who teach in the Riyadh, Qassim, Medina, and/or Hail school districts. However, of the 141 respondents, it was found that five individuals had indicated in the demographic section that they teach outside of the four targeted school districts. Therefore, the responses of these five teachers are indicated separately from those of the 136 teachers who teach in the four targeted

school districts. Additionally, although the five respondents were outside of the sample target areas, their responses are analyzed and discussed in this chapter. Table 9 presents the geographic location data for the teacher respondents.

Table 9

Frequency and Percentage of Geographic Distribution of Respondents

City	<i>N</i>	%
Riyadh	39	27.66
Qassim	56	39.72
Medina	19	13.48
Hail	22	15.60
Other Regions	5	3.55
Total	141	100.01

Note. The total % may be slightly more/less than 100.00 due to rounding.

Attitudes Toward Gifted Students and Gifted Education

Q1 What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?

Descriptive statistics were used to answer the first research question. The data obtained from the responses to the second section of the questionnaire were analyzed using SPSS ver. 23. Prior to conducting the analysis and to ensure the responses were analyzed appropriately, negative items were reverse-coded. Then, Cronbach's alpha coefficient of reliability was calculated for the questionnaire items to examine the internal consistency of each subscale. Cronbach's alpha is one of the most common ways of measuring the internal reliability of a questionnaire (Ary et al., 2010), and it ranges from 0 to 1; the goal is to achieve high scores that

are as close as possible to 1 (Santos, 1999). According to George and Mallery (2008), a Cronbach's alpha of between .60 to .79 indicates moderate reliability, whereas one in the range of .80 to .89 indicates good reliability. When the Cronbach's alpha for this study's questionnaire was calculated, it was found to have a value of .707, which indicates moderate reliability. In addition, Cronbach's alpha was calculated for each of the six subscales identified in the Gagné and Nadeau questionnaire, and the alphas for these were found to be: (a) support and needs of gifted children: $\alpha = .69$; (b) level of opposition: $\alpha = .68$; (c) rejection of gifted children: $\alpha = .60$; (d) school acceleration: $\alpha = .66$; (e) social value: $\alpha = .36$; and (f) ability grouping: $\alpha = .49$. As shown, the first four subscales fall into the range of acceptable reliability and the last two subscales were found to have poor reliability. As Cortina (1993) stated, Cronbach's alpha is affected by the number of items in the questionnaire because it examines and calculates the intercorrelation between the items. However, very high alpha does not necessarily indicate very high reliability because sometimes an alpha of .95 or above indicates that the instrument is repetitive in terms of the items. Furthermore, since Cronbach's alpha tends to increase as the size of the study instrument increases, this generally means that instruments with larger numbers of items tend to have higher Cronbach's alpha, meaning longer questionnaires (those with more items in them) tend to achieve greater scores of reliability and shorter ones may only achieve moderate or poor scores (Cortina, 1993; Schmitt, 1996; Taber, 2018).

Since the two subscales of "social value" and "ability grouping" only had a small number of items in each, it is possible that this is the reason for their low Cronbach's alpha scores. Therefore, a conservative approach was undertaken. As a result, these two subscales were excluded, and only the four scales with acceptable alphas in the range of .60 - .69 were used to answer the research questions. Previous studies that employed the same questionnaire reported

similar issues with the psychometrics of the survey, which led them to exclude subscales with poor reliability (e.g., McCoach & Siegle, 2007; Polyzopoulou et al., 2014).

The mean and standard deviation of the teachers' responses on the Likert scale were calculated and used in this analysis. Mean scores of the respondents were compared with mean cutoffs as defined by Gagné (1991). For subscales that represented positive attitudes toward the gifted (i.e., support and needs) the following mean cutoffs were used: (a) mean scores between 4.0 to 5.0 were classified as highly positive; (b) mean scores between 3.24 to 3.99 were classified as positive; (c) mean scores between 2.75 to 3.23 were classified as ambivalent; (d) mean scores from 2.00 to 2.74 were classified as negative; and (e) mean scores of 1.99 and under were classified as highly negative. For subscales that represented negative attitudes toward the gifted (i.e., level of opposition, rejection of gifted children, school acceleration) the following mean cutoffs were used: (a) mean scores between 4.0 to 5.0 were classified as highly negative; (b) mean scores between 3.24 to 3.99 were classified as negative; (c) mean scores between 2.75 to 3.23 were classified as ambivalent; (d) mean scores from 2.00 to 2.74 were classified as positive; and (e) mean scores of 1.99 and under were classified as highly positive. Since the school acceleration subscale contained items that represented both positive and negative attitudes toward the gifted, the two positive items were reverse-coded to ensure all of the items reflected negative attitudes for the analysis. This decision aligns with the practice of McCoach and Siegle (2007), who reverse-coded the positive items in the school acceleration subscale, to ensure that when the responses to the items in the subscale were analyzed, the mean scores would all be classified in terms of negative attitude. The following are the results of the findings on teachers' attitudes regarding each of the four subscales (see Table 10).

Table 10

Four Subscales and Their Item Statements with Cronbach's Alpha

Subscales	Item Statement	Cronbach's Alpha
Support and Needs ^a	<p>Our schools should offer special educational services for the gifted.</p> <p>Gifted children are often bored in school.</p> <p>The gifted waste their time in regular classes.</p> <p>The specific educational needs of the gifted are too often ignored in our schools.</p> <p>The gifted need special attention in order to fully develop their talents.</p> <p>In order to progress, a society must develop the talents of gifted individuals to the greatest degree possible.</p> <p>Since we invest supplementary funds for children with disabilities, we should do the same for the gifted.</p> <p>The regular school program stifles the intellectual curiosity of gifted children.</p>	.69

Table 10 (continued)

Subscales	Item Statement	Cronbach's Alpha
Level of Opposition ^b	<p>Special programs for gifted children have the drawback of creating elitism.</p> <p>Children with difficulties have the greatest need for special educational services.</p> <p>Special educational services for the gifted are a mark of privilege.</p> <p>We have a greater moral responsibility to give special help to children with disabilities than to gifted children.</p> <p>Our schools are already adequate to meet the needs of the gifted.</p> <p>It is parents who have the major responsibility for helping gifted children develop their talents.</p> <p>The gifted are already favored in our schools.</p> <p>Taxpayers should not have to pay for special education for the minority of children who are gifted.</p> <p>Average children are the major resources in our society so they should be the focus of our attention.</p> <p>Gifted children might become vain or egotistical if they are given special attention.</p>	.68
Rejection of Gifted ^b	<p>A child who has been identified as gifted has more difficulty in making friends.</p> <p>Some teachers feel their authority threatened by gifted children.</p> <p>Often, gifted children are rejected because people are envious of them.</p>	.60

Table 10 (continued)

Subscales	Item Statement	Cronbach's Alpha
School Acceleration ^b	<p>Most gifted children who skip a grade have difficulties in their social adjustment to being with a group of older students.</p> <p>*It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.</p> <p>Children who skip a grade are usually pressured to do so by their parents.</p> <p>When skipping a grade, gifted students miss important ideas (they have "holes" in their knowledge).</p> <p>*A greater number of gifted children should be allowed to skip a grade.</p>	.66

^a Positive attitudes toward the gifted. ^b Negative attitudes toward the gifted.

* Indicates the items that were reverse-coded.

Support and Needs of Gifted Children. The first subscale contained eight items on the questionnaire (Items 1, 9, 11, 14, 15, 24, 30, and 32); focusing on teachers' perceptions of the needs of gifted students and the level of support for special services for gifted students (e.g., Item 9, Gifted children are often bored in school.). The higher mean score in this subscale indicates more positive attitudes (Gagné, 1991). Overall, the results of the descriptive analysis indicated that the respondents had positive attitudes regarding the needs of gifted students and regarding supporting those needs. The respondents had a mean score of 3.98 and standard deviation of 0.508, which falls in the positive range of 3.24 to 3.99 as identified by Gagné (1991; see Table 11).

Table 11

Mean and Standard Deviation for Support and Needs Subscale

Item No.	Item Statement	<i>M</i>	<i>SD</i>
1	Our schools should offer special educational services for the gifted.	4.59	.61
9	Gifted children are often bored in school.	3.66	1.05
11	The gifted waste their time in regular classes.	3.34	1.12
14	The specific educational needs of the gifted are too often ignored in our schools.	4.08	.89
15	The gifted need special attention in order to fully develop their talents.	4.44	.67
24	In order to progress, a society must develop the talents of gifted individuals to the greatest degree possible.	4.33	.70
30	Since we invest supplementary funds for children with disabilities, we should do the same for the gifted.	3.86	.94
32	The regular school program stifles the intellectual curiosity of gifted children.	3.49	1.06

Level of Opposition. This subscale of the survey focused on the objections that are often raised regarding special services for gifted students, such as the idea that providing special services prioritizes gifted students over typical students or students with disabilities (e.g., Item 5: Special educational services for the gifted are a mark of privilege). This section had 10 items (Items 3, 4, 5, 12, 17, 18, 23, 26, 27, and 28). As noted earlier, this subscale was designated as negative toward gifted students and gifted education. Therefore, a higher mean score in this subscale would indicate a more negative attitude toward providing special services for gifted students. The mean score of the responses from the teachers in the current study was 2.59 with a standard deviation of 0.53, which falls in the positive attitude range of 2.00 to 2.74. The results of the descriptive analysis indicated that the respondents had positive attitudes regarding providing special services for gifted students, which indicates that they have a lower level of opposition toward gifted students and gifted education services. Table 12 presents the means and standard deviations for each item on this subscale.

Table 12

Mean and Standard Deviation for Level of Opposition Subscale

Item No.	Item Statement	<i>M</i>	<i>SD</i>
3	Special programs for gifted children have the drawback of creating elitism.	2.38	1.07
4	Children with difficulties have the greatest need for special educational services.	1.93	.93
5	Special educational services for the gifted are a mark of privilege.	2.46	1.20
12	We have a greater moral responsibility to give special help to children with disabilities than to gifted children.	2.37	1.06
17	Our schools are already adequate to meet the needs of the gifted.	1.88	.86
18	It is parents who have the major responsibility for helping gifted children develop their talents.	2.59	1.13
23	The gifted are already favored in our schools.	2.90	1.10
26	The government should not have to pay for special education for the minority of children who are gifted.	3.89	1.00
27	Average children are the major resources in our society so they should be the focus of our attention.	2.58	1.06
28	Gifted children might become vain or egotistical if they are given special attention.	3.01	1.02

Rejection of Gifted Students. This subscale focused on the rejection of gifted students by others in their immediate environment (e.g., Item 22, Some teachers feel their authority threatened by gifted individuals); this section had three items on the survey (Items 19, 22, and 31). A higher mean score in this subscale indicates more negative attitudes toward gifted

students. The responses indicated ambivalent attitudes toward the rejection of gifted students. The mean score of the responses was 2.99 with a standard deviation of 0.73, which falls in the ambivalent range of 2.75 to 3.23. Table 13 shows the means and standard deviations for each item on this subscale.

Table 13

Mean and Standard Deviation for Rejection of Gifted Children Subscale

Item No.	Item Statement	<i>M</i>	<i>SD</i>
19	A child who has been identified as gifted has more difficulty in making friends.	3.04	1.03
22	Some teachers feel their authority threatened by gifted children.	2.87	.938
31	Often, gifted children are rejected because people are envious of them.	3.07	.978

School Acceleration. The last subscale focused on the respondents' attitudes toward acceleration of gifted students in their schools (e.g., Item 34, A greater number of gifted students should be allowed to skip a grade); this section had five items on the survey (Item 7, 8, 10, 29, and 34). As noted previously, the current study followed the practice of McCoach and Siegle (2007), which was to treat this subscale as negative, meaning a higher mean score in this subscale indicates a more negative attitude toward gifted students and gifted education. The study respondents were found to hold ambivalent attitudes toward the acceleration of gifted students as a method for challenging gifted students and meeting their needs. The mean score of their response was 3.05 and the standard deviation was 0.435. Table 14 shows the mean and standard deviation for each of the items on this subscale.

Table 14

Mean and Standard Deviation for School Acceleration Subscale

Item No.	Item Statement	<i>M</i>	<i>SD</i>
7	Most gifted children who skip a grade have difficulties in their social adjustment to being with a group of older students.	2.56	.91
8*	It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.	3.03	1.11
10	Children who skip a grade are usually pressured to do so by their parents.	2.80	.85
29	When skipping a grade, gifted students miss important ideas (they have “holes” in their knowledge).	2.85	1.13
34*	A greater number of gifted children should be allowed to skip a grade.	3.30	.93

* Indicates the items that were reverse-coded.

Descriptive Analysis for Five Respondents Outside of Target Sample

The results of the separate analysis of the responses of the five respondents who did not meet all of the inclusion criteria were very similar to those found for the respondents who teach in the four target regions. The descriptive analysis results for the group of five indicated that the respondents had positive attitudes regarding the needs of gifted students and regarding supporting those needs. The respondents had a mean score of 3.97 and standard deviation of 0.50, which falls in the positive range of 3.24 to 3.99. In addition, the respondents were found to have positive attitudes regarding providing special services for gifted students. The mean score of the responses here was 2.70 with a standard deviation of 0.44, which falls in the positive range

of 2.00 to 2.74. Their responses also indicated ambivalent attitudes toward the rejection of gifted students. The mean score of these responses was 3.00 with a standard deviation of 0.84, which falls in the ambivalent range of 2.75 to 3.23. Finally, the respondents were found to hold ambivalent attitudes toward the acceleration of gifted students as a method for challenging them and meeting their needs. The mean score of their response here was 3.08 and the standard deviation was 0.71. Table 15 shows the mean scores and standard deviations for each subscale and each group of respondents.

Table 15

Mean and Standard Deviation for Each Subscale and Each Group of Respondents

Group	Subscale	<i>M</i>	<i>SD</i>	Attitude Classification
Five Respondents Outside Target Sample	Support and Needs of Gifted Children	3.97	.50	Positive
	Level of Opposition*	2.70	.44	Positive
	Rejection*	3.00	.84	Ambivalent
	School Acceleration*	3.08	.71	Ambivalent
Target Sample	Support and Needs of Gifted Children	3.98	.50	Positive
	Level of Opposition*	2.59	.53	Positive
	Rejection*	2.99	.73	Ambivalent
	School Acceleration*	3.05	.43	Ambivalent

* Indicates subscale was designated negative.

***Factors That Might Predict Attitudes
Toward Gifted Students and Their
Education***

- Q2 What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?

Four multiple regression analyses were conducted to answer the second research question regarding which factors predicted teachers' attitudes toward gifted students and their education. Specifically, these analyses were conducted to investigate the relationship between the dependent variables of: (a) support and needs of gifted children, (b) level of opposition, (c) rejection of gifted children, and (d) school acceleration; and the predictor variables from the demographic questions (i.e., type of training in gifted education, years of experience teaching/working with the gifted, having a gifted child or a gifted family member, and self-perception as gifted or not gifted). Categorical variables were transformed into dummy variables before conducting the analysis. The categorical variables (e.g., Having a Gifted Child or a Gifted Family Member) were coded as "0" or "1." For example, "Having a gifted child or a gifted family member" was coded as "1," and not having a gifted child or a gifted family member was coded as "0."

Two of the categorical variables contained four different options to choose from regarding how the teachers could respond. Type of training in gifted education (i.e., college course as part of education degree, professional development offered by school district, professional development offered outside of school district, and other resource) and years of experience teaching/working with the gifted (i.e., 1-5, 6-10, 11-15, 16 and more years). However, most of the respondents chose only one of the levels of categorical variable. Since the general rule of thumb for conducting multiple regression requires that each variable has at least 10-20 cases (observations) for each predictor variable, to detect reasonable effect size with an acceptable power (Harrell, 2015), these two categorical variables were dummy coded where: (a) those who

had any type of training in gifted education were coded as yes or no; and (b) those who had any years of experience teaching/working with the gifted were also dummy coded as yes or no. This was due to the limited number of cases that were found in each level of the two categorical variables. So, having any type of training in gifted education was coded as “1,” and not having any training in gifted education was coded as “0.” Similarly, having any years of experience teaching/working with the gifted was coded as “1,” and not having any years of experience teaching/working with the gifted was coded as “0.” The data were also screened for extreme outlier scores since outliers can cause biases on regression models due to their impact on the values of the estimated regression coefficient, thus extreme outliers were removed.

In addition, the multiple regression assumptions were inspected for each dependent variable for such factors as: (a) normality of residuals, (b) linearity, (c) homoscedasticity, (d) multicollinearity assumption, and (e) independence of residuals. The results of this inspection indicated that none of the assumptions were violated. The first assumption of multiple regression is normality of residuals, where the multivariate of the scores of the variables (independent and dependent) are normally distributed. Normality tests were conducted in SPSS and these showed that the data were normally distributed; thus, this assumption was not violated.

The second assumption of multiple regression is linearity, where there is a linear relationship between independent and dependent variables. A scatterplot was used to check for this, which showed that this assumption was met and that there was linearity between the variables. A homoscedasticity assumption, where assumption of variance in variables is equal, was inspected using a residuals scatterplot, and no violation was detected for this assumption. In addition, the independence of residuals was inspected using the residuals scatterplot to see if the

cases were independent; the scatterplot showed that they were independent, thus, this assumption was met.

The other assumption for multiple regression is multicollinearity, where there is relationship between the independent variables. A collinearity diagnostics test was performed to check if there was multicollinearity among the variables. Variance inflation factor (VIF) values were checked; any value of VIF above 10 indicates there is no collinearity within the data and the assumption is met (Field, 2009). Results of collinearity diagnostics indicated there was no violation of this assumption. All of the dependent variables had a VIF value below 10; the VIF values for all the dependent variables were between 1.408 and 1.141.

After the assumptions of multiple regression were inspected and found to be met, the data were analyzed to answer the third research question (What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?). The mean scores of the respondents' attitudes from the Likert scale responses on each of the four subscales were analyzed for the dependent variable, and then "training in gifted education," "years of experience teaching/working with the gifted," "having a gifted child or a gifted family member," and "self-perception as gifted or not gifted," were analyzed as independent variables.

Support and Needs of Gifted Children. The overall evaluation of the multiple regression model, examining the relationship between teachers' attitudes on the first subscale (i.e., support and needs of gifted children) and the predictor variables, revealed an $R^2 = .146$ (adjusted $R^2 = .120$), which was significantly different from zero ($F = 5.609$, $p = .000$, Cohen's $f^2 = .17$), meaning that the predictor variables explained 14.60% of the variation in the respondents' total score for attitude on this subscale. Standardized beta weights were used to

compare the strength of the effect of each of the predictor variable (i.e., having training in gifted education, having years of experience teaching/working with the gifted, having a gifted child or a gifted family member, and self-perception as gifted or not gifted) on the dependent variable (support and needs of gifted children subscale). This is done by determining if the predictor variable changes the standard deviation either negatively or positively to a significant degree. In this case, the results showed that only one predictor variable demonstrated such significant effect on the respondents' attitude scores toward the needs of gifted students and gifted education, which was having training in gifted education. This predictor variable was found to have high positive standardized beta weight of .359.

The other two predictor variables--Having a Gifted Child or Gifted Family Member and Self-Perception as Gifted--had positive standardized beta weights, but not to a great enough degree to be considered significant or directly related to the teachers' attitudes toward supporting the needs of gifted students. In addition, the results revealed that the fourth predictor variable, years of experience teaching/working with the gifted, had negative standardized weights and did not demonstrate significant effect on the respondents' attitudes toward supporting the needs of gifted students. The unstandardized regression coefficients (B), standardized regression coefficients (β), semipartial correlations (sr_i), t -values, and p -values for each predictor variables are presented on Table 16.

Table 16

Results of Multiple Regression Analyses--Support and Needs Subscale

Model	<i>B</i>	β	<i>t</i> -Value	<i>p</i> -Value	<i>sr</i> _i
Constant	3.882		65.257	.000	
Years of Experience Teaching/Working With the Gifted	-.118	-.110	-1.289	.200	-.104
Training in Gifted Education	.416	.359	4.343	.000	.351
Having a Gifted Child or a Gifted Family Member	.008	.007	.075	.940	.006
Self-Perception as Gifted	.081	.077	.831	.407	.067

Closer examination of the mean scores of the significant predictor variable (i.e., having training in gifted education) toward the support and needs of gifted students' subscale, revealed that teachers with training in gifted education had a mean score of 4.29, which indicates a highly positive attitude toward supporting the needs of gifted students. On the other hand, teachers without training in gifted education had a mean score of 3.87, which indicates a positive attitude toward supporting the needs of gifted students.

Level of Opposition. The overall evaluation of the multiple regression model, examining the relationship between teachers' attitudes on the second subscale (i.e., level of opposition) and the predictor variables, revealed an $R^2 = .087$ (adjusted $R^2 = .060$), which is significantly different from zero ($F = 3.139$, $p = .017$, Cohen's $f^2 = .09$), meaning that the predictor variables explained 8.70% of the variation in the respondents' total score for attitude on this subscale. Three of the four predictor variables contributed significantly to the prediction of teachers' positive attitudes toward providing special services to gifted students. These variables were training in gifted education, years of experience teaching/working with the gifted, and self-

perception as gifted. Training in gifted education showed a positive standardized beta weight and demonstrated significant effect on teachers' attitudes on this subscale. Years of experience teaching/working with the gifted and self-perception as gifted had negative standardized beta weight, which indicates low opposition (positive attitudes) toward providing special services to gifted students; on this subscale the lower the standardized beta weight the lower the respondents' support is for opposing the concept, which in this case is the provision of special services to the gifted. However, the other predictor variable, having a gifted child or gifted family member, had a positive standardized beta weight and did not demonstrate significant effect on the respondents' attitude toward providing special services to gifted students. The unstandardized regression coefficient, standardized regression coefficient, semipartial correlations, *t*-values, and *p*-values are presented for predictor variables on Table 17.

Table 17

<i>Results of Multiple Regression Analyses--Level of Opposition Subscale</i>					
Model	<i>B</i>	β	<i>t</i> -Value	<i>p</i> -Value	<i>sr</i> _i
Constant	2.653		41.046	.000	
Years of Experience Teaching/Working With the Gifted	-.199	-.176	-1.997	.048	-.167
Training in Gifted Education	.249	.204	2.387	.018	.199
Having a Gifted Child or a Gifted Family Member	.070	.061	.631	.529	.053
Self-Perception as Gifted	-.214	-.192	-2.016	.046	-.168

Closer examination of the mean scores of the significant predictor variables (i.e., training in gifted education, years of experience teaching/working with the gifted, and self-perception as gifted) on the respondents' attitudes regarding level of opposition toward the provision of special

services to gifted students revealed that teachers with training in gifted education had a mean score of 2.73, which indicates a slightly positive (less opposition) attitude toward providing gifted services to gifted students, whereas teachers without training in gifted education had a mean score of 2.54, which indicates a positive attitude toward providing special services to gifted students. Both of these mean scores for these two groups were in the positive range for this subscale. That could be an explanation for the positive beta weights, which were revealed to be statistically significant. In addition, the results revealed that respondents who had years of experience teaching/working with the gifted had a mean score of 2.46, which indicates less opposition toward providing special services to gifted students; whereas teachers with no years of experience teaching/working with gifted students had a mean score of 2.66, which indicates slightly positive attitudes on this subscale. The results of the third significant predictor, self-perception as gifted, revealed that respondents who rated themselves as gifted had a mean score of 2.48, which indicates positive attitudes on this subscale; whereas those who did not rate themselves as gifted had a mean score of 2.65, which indicates slightly positive attitudes on this subscale.

Rejection of Gifted Children. The overall evaluation of the multiple regression model, examining the relationship between teachers' attitudes on the third subscale (i.e., rejection of gifted children) and the predictor variables, revealed an $R^2 = .016$ (adjusted $R^2 = -.015$), which was not significantly different from zero ($F = .517, p = .723$, Cohen's $f^2 = .016$), meaning predictor variables explained only 1.60% of the variation in the respondents' ambivalent attitude scores. The results of the inspection of which variables contributed significantly to the regression model revealed that none of the predictor variables demonstrated significant effect on the respondents' attitude scores on their ambivalent attitudes toward rejection of gifted students.

Two of the predictor variables had negative standardized beta weights but were not statistically significant to a great enough degree to be considered directly related to the teachers' ambivalent attitudes toward rejection of gifted students. Therefore, it was considered that there might be other variables affecting teachers' attitudes on this subscale. The unstandardized regression coefficient, standardized regression coefficient, semipartial correlations, *t*-values, and *p*-values for each *predictor variables* are presented on Table 18.

Table 18

Results of Multiple Regression Analyses--Rejection of Gifted Children Subscale

Model	<i>B</i>	β	<i>t</i> -Value	<i>p</i> -Value	<i>sr</i> _i
Constant	3.062		33.121	.000	
Years of Experience Teaching/Working With the Gifted	-.015	.010	.109	.914	.009
Training in Gifted Education	-.185	-.110	-1.244	.216	-.108
Having a Gifted Child or a Gifted Family Member	-.096	-.061	-.602	.548	-.052
Self-Perception as Gifted	.024	.015	.156	.876	.014

School Acceleration. The overall evaluation of the multiple regression model, examining the relationship between teachers' attitudes on the third subscale (i.e., School Acceleration) and the predictor variables, revealed an $R^2 = .026$ (adjusted $R^2 = -.004$), which was not significantly different from zero ($F = .879$, $p = .479$, Cohen's $f^2 = .026$), meaning predictor variables explained only 2.60% of the variation in the respondents' attitude scores on the acceleration subscale. The results of the inspection of which variables contributed significantly to the regression model revealed that none of the predictor variables demonstrated significant effect on the respondents' attitude scores on their ambivalent attitudes toward school acceleration of gifted

students. Three of the predictor variables had negative standardized beta weights but were not statistically significant to a great enough degree to be considered directly related to the teachers attitudes toward school acceleration of gifted students. Therefore, it was determined there might be other variables affecting teachers' attitudes on this subscale. The unstandardized regression coefficient, standardized regression coefficient, semipartial correlation, t -values, and p -values are presented for predictor variables on Table 19.

Table 19

<i>Results of Multiple Regression Analyses--School Acceleration Subscale</i>					
Model	B	β	t -Value	p -Value	sr_i
Constant	3.105		57.040	.000	
Years of Experience Teaching/Working With the Gifted	-.076	-.082	-.902	.369	-.078
Training in Gifted Education	-.131	-.132	-1.496	.137	-.129
Having a Gifted Child or a Gifted Family Member	-.013	-.014	-.141	.888	-.012
Self-Perception as Gifted	.024	.027	.273	.785	.024

Where Training in Gifted Education was Obtained. A further analysis was conducted to see which type of training in gifted education (university courses, training in gifted education that was provided by the school district, training in gifted education that was provided out of the school district, and outside resources) contributed to the four regression models. Three variables --university courses, inside resources, and outside resources--were removed. That is because each of these three variables had less than the required number of observations. The results of the regression models examining the relationship between teachers' attitudes on the four subscales (i.e., support and needs of gifted children, level of opposition, rejection of gifted children, and

school acceleration), and the predictor variables, including training that was done within school districts ($n = 32$; 21.99%) demonstrated significant effect on two of the regression models (i.e., support and needs of gifted children, level of opposition), however, the results were not significant for the rejection of gifted children regression model ($\beta = -.135, p = .117$) and the school acceleration regression model ($\beta = -.141, p = .118$).

Perception of the Gifted and Their Social and Emotional Needs

Q3 What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?

The respondents' qualitative responses to the open-ended questions on the survey, regarding the social and emotional needs of gifted students, were used to answer the third research question. A total of 113 teachers (80.14% response rate of the 141 respondents, including the five outside the target areas), provided answers to one or more of the open-ended questions. An inductive approach was used to analyze these responses. The teachers' responses were first coded and then organized into themes and subthemes. The teachers' answers were organized into the following two themes: (a) the multifaceted nature of giftedness, and (b) environmental support is needed to meet the affective needs of the gifted.

Theme 1: The Multifaceted Nature of Giftedness. In general, the respondents' answers showed some lack of awareness regarding giftedness but did indicate an understanding that giftedness is a multifaceted construct. The responses of the participants that were pertinent to how they define giftedness and perceive gifted individuals were mostly focused on the idea that giftedness is a matter of exceptional cognitive or creative traits; this thinking does not consider the idea that the social and emotional needs of gifted students might differ from those of their typical peers. It was also indicated by the responses to these items that the respondents consider

giftedness to be something that individuals are born with, and some described it as being bestowed upon these children from God. For example, about two-thirds of these respondents ($n = 77$, 68.14%) indicated that they perceive giftedness in terms of high intelligence or high scores on IQ tests. The idea of “high mental ability” was the one most referenced by the respondents when describing giftedness. For example, one of the teachers stated that “gifted individuals are the ones who have high mental abilities that place them in front of others.” Another teacher stated that “gifted individuals are those who have high mental abilities that are above [those of] their classmates.” In addition, some teachers indicated they believe that giftedness is something a person is either born with or not born with. For example, some of the teachers ($n = 7$) expressed the belief that giftedness is a gift from God. One teacher stated that giftedness is “a trait from God that distinguishes [the gifted child] from others.” Another teacher stated that “gifted individuals are those whose God gifts them with high intellectual and thinking abilities that distinguish them from their peers.” Along with their belief that giftedness only involves high mental ability or inherited traits, teachers exhibited a belief that giftedness involves the possession of certain academic characteristics, such as reading ability, strong memory, ability to learn quickly, creativity, problem-solving ability, and being self-directed and/or independent learners. In addition, some teachers indicated they believe giftedness involves excelling in specific academic areas, such as math and/or science – and three of the teachers, including one of the five participants outside the target sample, indicated they believe it involves excelling in only one area, such as only in the arts or only in math.

Generally, of the 77 participants, ($n = 46$; 59.74%) the teachers’ answers indicated the perception that giftedness mostly involves positive social-emotional characteristics. In their responses to the different open-ended items, the respondents mentioned different positive social

characteristics of gifted students, including: the ability to make friends easily, a tendency to work well with others, and being possessed of a good sense of humor. For example, one of the participants stated that “gifted students do not show off or exaggerate the knowledge they have, and they are collaborators.” Another participant pointed out that “gifted students [are] socially characterized [by] high self-esteem, good sense of humor, and love to help their peers.” In addition, positive perfectionism is another affective characteristic two participants indicated they believe accompanies giftedness. For example, one participant stated, “some gifted students have some sort of perfectionism and often ask for school duties.” This statement indicates that the respondent views perfectionism positively, because the student focuses that trait in a helpful way.

These perceptions led to the development of Subtheme 1a, which was the Absence of Social-Emotional Issues. While the teachers’ responses indicated that they have a perception of gifted individuals as people who possess both cognitive and affective traits, some of their open-ended responses showed that they may not necessarily understand that affective traits are not only positive and that these can lead to issues for students. Very few of the survey respondents indicated that they perceive any negative traits related to giftedness or that gifted might involve any negative social and emotional characteristics. For example, one teacher stated, “It is rare to find any social or emotional issues with the gifted.” This statement infers that the respondent might not understand what “social and emotional needs” refers to, since the phrasing seems to indicate that they view “social and emotional issues” as something that would be in some way negative or disruptive. This might be related to the perception of the respondents that such students are good at adjusting to new environments. However, some respondents indicated they believe that pressures to succeed or excel may lead to social and emotional issues in the gifted.

For example, a few participants asserted they believe concerns about excelling academically could lead to some emotional issues, such as anxiety and perfectionism. For example, one respondent stated that “gifted students are very afraid and anxious of [poor grades or losing points].” Another teacher pointed out that “gifted students suffer [when] losing grades,” in reference to how gifted students might be affected should they not achieve the grades they feel they should. Sensitivity is another affective characteristic that the respondents perceive as accompanying giftedness. For example, several of the respondents ($n = 7$) indicated a perception that gifted students are sensitive. However, this was still framed in a positive light, as one respondent described it, “Gifted students are calm and sensitive at the same time.” This statement indicates that while the teacher recognizes that one trait of giftedness is sensitivity, the respondent might not necessarily associate being sensitive with over-reacting or becoming anxious.

Theme 2: Additional Environmental Support is Needed to Meet the Affective Needs of the Gifted. Based on their responses to two of the open-ended items, the teachers indicated that they recognize the importance of a supportive environment to meet the social and emotional needs of gifted students, even if they do not necessarily fully understand what the unique affective needs of these students are. For example, 37 respondents indicated that they believe both schools and families are responsible for meeting the social and emotional needs of gifted students. Participants’ answers indicate a belief that schools and families should work side-by-side to support the social and emotional adjustment of gifted students, and that this cannot be achieved without both parties. One respondent stated that “schools and teachers have a big role in meeting the needs of gifted students, but not the whole responsibility, because parents play an important role as well.” Another teacher mentioned that schools and teachers are able to meet the

needs of the gifted; however, this cannot be achieved by educators alone because there are external factors that need the parents' attention and support.

While many of the respondents acknowledged the joint role of schools and families in nurturing gifted students' social and emotional needs, some teachers felt just one or the other should be solely responsible for this. For example, 14.16% of the teachers ($n = 16$) who responded to at least one of the open-ended questions indicated a belief that it is the school's responsibility to meet the social and emotional needs of gifted students due to the fact that schools have more knowledgeable staff and greater resources to help gifted students in their development. Conversely, 10.62% of this same group ($n = 12$) indicated that they believe families have the greatest responsibility for meeting the affective needs of gifted students and stated this is because they perceive parents as more knowledgeable regarding their children's emotional development. These respondents indicated that they feel schools should only be responsible for the academic needs of gifted students.

The respondents' answers also indicated that they believe that it is necessary to provide a motivating and caring environment to gifted students in order to support their social and emotional development. For example, most of the teachers mentioned the idea that gifted students require motivation and academic support in school to develop their social and emotional adjustment. One teacher explained that gifted students need "caring teachers who are able to motivate them whenever they need it." Another teacher pointed out that "gifted students need a sustainable academic environment and trained teachers to deal with and motivate them." Three teachers (2.65%) stated that they believe gifted students need to be identified at an early age and provided with the necessary academic and affective services. One respondent also mentioned that teachers should avoid putting too much pressure on gifted students regarding achieving

greater accomplishments because this can be detrimental to their social and emotional development. Table 20 presents the themes and subthemes that developed regarding the teachers' perceptions of the social and emotional needs of gifted students.

Summary

This chapter presented in detail the results of the statistical tests used to analyze and answer the three research questions. The data were collected from general education elementary school teachers in Saudi Arabia to investigate their attitudes and perceptions regarding giftedness and gifted education. These data were analyzed using descriptive and inferential statistical procedures. The findings of the descriptive analysis showed that the teachers' responses on the support and needs subscale indicated that they had positive attitudes toward supporting the needs of gifted students. In addition, the teachers' responses indicated that they had a lesser degree of opposition toward providing special services to gifted students. The findings on teachers' attitudes regarding rejection of gifted students and school acceleration were uncertain. Multiple regression analysis was used to answer the second research question. The results of the regression analysis showed that training in gifted education has significant impact on teachers' attitudes toward gifted students and their education. Regarding the third research question, two themes emerged from the results of the teachers' qualitative responses. Most of the teachers' responses indicated that they perceive giftedness as involving certain cognitive, innate, and/or affective traits. In terms of the social and emotional characteristics and developmental needs of gifted students, the respondents' answers indicated that they recognize the positive social and emotional characteristics of the gifted more than they do the negative traits commonly associated with the gifted. Furthermore, most of the teachers' responses indicated that they perceive that the positive affective needs of gifted individuals must be met in order for these individuals to be

socially and emotionally well-adjusted. Most of the respondents indicated that they recognize the importance of both school and family in supporting the social and emotional needs and development of gifted students.

Table 20

Themes and Subthemes Regarding Respondents' Perceptions of Affective Needs of the Gifted

Item #	Theme	Subtheme	Quote Examples	<i>n</i>	%
1	The Multifaceted Nature of Giftedness		<p>"A person who is distinguished from others by intelligence, memory, and observational skills."</p> <p>"Students who score high on IQ tests, above 130."</p> <p>"A person who is creative and has high intelligence."</p> <p>"Special gifts that were given by God."</p>	77	68.14
		Subtheme 1a:	"Gifted students are socialized and love to help others in the classroom."		
		The Absence of Social-Emotional Issues	<p>"[Gifted students have a] high sense of humor and ability of making friends in any new environment."</p> <p>"Gifted students always ask for the upcoming assignments before [they are] due."</p> <p>"[Gifted students] are anxious and sensitive with their academic accomplishments."</p> <p>"Gifted students always ask about why they did not get higher grades."</p>		
2	Additional environmental support is needed to meet the affective needs of the gifted.		<p>"Gifted students are in need of special services and more care, such as motivation, to develop their social and emotional adjustment."</p> <p>"Responsibility [for] developing the social and emotional needs of the gifted are not only on me, but parents also need to collaborate."</p> <p>"School psychologists are more knowledgeable in how to meet the social and emotional needs of the gifted students."</p>	36	31.86

Note. For this table, $N = 113$. This is the total number of respondents who responded to one or more of the open-ended items and which includes all 5 who taught outside of the target area.

CHAPTER V

DISCUSSION

Introduction

General education classroom teachers play an important role in whether the needs of gifted students are met effectively in schools (Szymanski & Shaff, 2013). These teachers have great influence on ensuring the provision of necessary services for gifted students by first nominating students through established identification procedures, and then by facilitating and delivering appropriate instruction to these gifted students within their classrooms (Siegle et al., 2010). Therefore, in order to effectively meet and address the needs of these students, teachers must understand both the cognitive and affective characteristics of gifted children (T. Cross, 2017; Reis & Renzulli, 2004). Different factors influence the way teachers interact with gifted students; among these are their attitudes and perceptions regarding giftedness and gifted education. Research has found that these factors about gifted students' developmental needs and their education may impact the development of gifted curricula and the successful delivery of gifted services (Baudson & Preckel, 2016; Carrington & Bailey, 2000; Davis et al., 2011; Scott, 2000). The findings of previous research on teachers' attitudes toward giftedness and gifted education have been mixed, with some studies finding it to be positive (e.g., McCoach & Siegle, 2007; Watts, 2006), some finding it to be negative (e.g., Geake & Gross, 2008), and still others obtaining both positive and negative findings (e.g., Carrington & Bailey, 2000; Lassig, 2009).

Therefore, the purpose of this study was to provide additional insight on the topic to the body of literature already established, from the perspective of a different culture. In this way, this

research hoped to build upon previous studies in the effort to determine how to provide additional support for general education teachers to help meet the needs of these gifted students in the general education classroom. Specifically, this study examined Saudi elementary school general education teachers' attitudes regarding gifted students and their education. In addition, this study aimed to explore the teachers' perceptions of the social and emotional development and needs of gifted students. A description of the results of the current study as they relate to the existing literature on this topic, implications for practice, limitations, and suggestions for future research are discussed in this chapter. The research questions that guided the study were:

- Q1 What are Saudi elementary school general education teachers' attitudes toward gifted students and gifted education?
- Q3 What factors predict Saudi elementary school general education teachers' attitudes toward gifted students and their education in Saudi Arabia?
- Q3 What perceptions do Saudi elementary school general education teachers currently hold regarding the social and emotional needs of gifted students?

Attitudes of Saudi General Education Teachers Toward Gifted Students and Gifted Education

As noted previously, it was a goal of this study to investigate Saudi elementary school general education teachers' attitudes toward gifted students and their education. To accomplish this, descriptive statistical analysis was used to examine these teachers' attitudes. This research used four of the subscales on Gagné and Nadeau's attitude scale, "Opinions About the Gifted and Their Education," which were: support and needs of gifted children, level of opposition, rejection of gifted children, and school acceleration. In general, the results regarding the teachers' attitudes toward the four subscales seemed to be influenced by Saudi culture and how giftedness is identified and served within the Saudi school system. For example, the teachers' attitudes toward

school acceleration was found to be ambivalent and one possible explanation for this might be the limited use of this strategy in the Saudi school system.

The teachers who participated in this study were found to have positive attitudes toward supporting and meeting the needs of gifted students and were found to have positive attitudes and little opposition toward providing special services to gifted students (support and needs of gifted children/level of opposition). These findings of the current study were consistent with those of previous studies that found general education teachers typically display positive attitudes toward the support of gifted students and toward meeting their needs (Chipeco, 2004; S. Gallagher et al., 2011; Lassig, 2009; McCoach & Siegle, 2007; Moon & Brighton, 2008); as well as with previous studies that also found general education teachers exhibit positive attitudes (little opposition) toward providing special services to gifted students (Allodi & Rydelius, 2008; Watts, 2006). However, in the current study, when the teachers' attitudes on the subscales of rejection of gifted students (by others in their immediate environment) and school acceleration were analyzed, these were found to be ambivalent, which could indicate that Saudi teachers lack an understanding that gifted students may experience rejection from teachers and others in their environment for different reasons (e.g., *Often, gifted children are rejected because people are envious of them.*), which may affect the social and emotional development of gifted students. Similarly, their responses might indicate that they do not know school acceleration is a specific "special service" that has been found to benefit this population of students in achieving to their potential (e.g., *When skipping a grade, gifted students miss exposure to important subjects [they have "holes" in their knowledge].*). The ambivalence toward acceleration on the part of the study's participants was consistent with the findings of previous studies (e.g., S. Gallagher et al., 2011; Gross, 2006; Lassig, 2009; McCoach & Siegle, 2007; Siegle et al., 2013).

In addition, these ambivalent responses of the current study's participants also seem to indicate that even though the teachers were supportive of meeting the needs of gifted students by providing special services to them, they were seemingly uncertain about the benefit(s) of some of the special service options (e.g., acceleration) and about some of the issues gifted students might face, including rejection by others. Yet another possible explanation for the current study's findings regarding teachers' uncertain attitudes toward isolation or rejection of gifted students by others in their immediate environment could be the fact that the unique needs of gifted children have only recently begun to be recognized and addressed in Saudi Arabia and in the Saudi education system (Aljughaiman & Grigorenko, 2013; Faisal & Ghani, 2015). Thus, gifted students and their needs are not yet an area that is covered in most Saudi university education programs, nor is this topic commonly discussed within Saudi schools by administrators and educators. For example, within the rejection of gifted children subscale, on the item "*Some teachers feel their authority threatened by gifted children,*" the teachers' responses indicated that they were uncertain about whether other teachers might have such feelings.

Furthermore, regarding the findings of the current study that showed that the respondents hold ambivalent attitudes toward accelerating gifted students to meet their needs, this type of attitude is likely related to the limited use of this strategy in Saudi Arabian schools. In fact, although the Saudi Ministry of Education has a written policy for grade acceleration of gifted students, few schools employ this technique as a way of supporting their needs (Alarfaj & Al-Omair, 2020). In addition, there is a lack of clarity regarding practices and programs for supporting gifted students within the Saudi system, which might also create confusion for teachers. According to Alamiri (2020), even though the education system in Saudi Arabia has an established process for gifted programming and teaching practices, schools and teachers lack

clarity regarding which practices they should implement in the classrooms as to meet the ultimate goal of successfully serving gifted students. This can be seen in the teachers' responses on the majority of the items within the school acceleration subscale, where the mean scores of the respondents indicated an ambivalent attitude toward School Acceleration. This indicates that, the respondents were ambivalent about acceleration, which could be related to their inexperience with implementing the practice because it is not typically employed in Saudi Arabia. For example, one of the items referred to the idea that acceleration can benefit gifted students (*It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.*), and the teachers' responses indicated they were uncertain about this item. In addition, the Saudi culture also may play a role in teachers' attitudes toward accelerating gifted students, although while it is not often utilized in the country, a review of the research outside of Saudi on acceleration indicated that the practice is an important tool that has been found to develop gifted students' academic needs as well as to support their social and emotional well-being (Assouline et al., 2015; Colangelo et al., 2004). Despite the substantial positive empirical research that exists supporting the effectiveness of acceleration of gifted students, teachers still view the practice unfavorably (Assouline et al., 2015; Colangelo et al., 2004; Wells et al., 2009).

Predictors of Teachers' Attitudes

Previous studies on teachers' attitudes toward gifted students and their education conducted around the world, have noted that the characteristics of teachers can impact their attitudes toward gifted individuals and their educational needs (e.g., Bégin & Gagné, 1994 [Canada]; Donerlson, 2008 [United States]; Lassig, 2009 [Australia]; McCoach & Siegle, 2007 [United States]; Polyzopoulou et al., 2014 [Greece]; Portešová et al., 2011 [Czech Republic]; Schroth & Helfer, 2009 [United States]). Therefore, investigating different factors that were

determined by the literature to be predictors that might play a critical role in shaping teachers' attitudes toward gifted students and their education was the second goal of the current study. To accomplish this, the current study conducted multiple regression analyses on each of the four subscales to examine whether different factors (i.e., "type of training in gifted education," "years of experience teaching/the gifted," "having a gifted child or a gifted family member," and "self-perception as gifted or not gifted") contributed significantly to teachers' attitudes regarding the four subscales (i.e., support and needs of gifted children, level of opposition, rejection of gifted children, and school acceleration). As noted earlier, two of the categorical variables ("type of training in gifted education" and "number of years of experience teaching/working with the gifted") were dummy coded due to the limited number of cases that were found for each category; therefore, these two variables were changed to "having training in gifted education" (yes/no) and "having experience teaching/working with the gifted" (yes/no).

The study indicated that the predictor variable of training in gifted education had a significant effect on teachers' attitudes toward supporting the needs of gifted students and toward providing special services to the gifted. In other words, if a teacher had training in gifted education, they were more likely to have positive attitudes toward supporting and meeting the needs of the gifted. Similarly, these teachers were also less likely to oppose providing special services to gifted students. Again, this finding was supported by that of previous research, which identified training in gifted education as a predictor of positive teacher attitudes toward gifted students and their needs (Chipeco, 2004; Donerlson, 2008; Lassig, 2009; Miller, 2009; Polyzopoulou et al., 2014).

Interestingly, it was predicted that teachers' number of years of experience working with the gifted might be related to more positive attitudes toward gifted students and their needs;

however, this study found no significant relationship between teachers' years of experience working with the gifted and their attitudes toward supporting the needs of gifted students. This finding was not entirely surprising given that previous findings on this relationship with years of experience were mixed. For example, some researchers have found that years of experience working with the gifted students is related to teachers' attitudes toward the gifted (Bégin & Gagné, 1994; Donerlson, 2008; Russell, 2018), but others found no such relationship between the two (Chipeco, 2004; Geake & Gross, 2008). One possible explanation for these mixed results could be related to the specific type of experience the teachers in the particular study had working with the gifted. For example, in the current study, almost all of the teachers who indicated they had some number of years of experience working with the gifted indicated that their work was in the general education classroom as an instructor. This might indicate no experience with delivering gifted special instruction or developing classroom activities specifically for the gifted (e.g., Donerlson, 2008; Russell, 2018).

Additionally, the findings of the multiple regression analyses for each of the four subscales indicated that teachers' attitudes toward gifted students and their education were also not related to whether they did or did not have a gifted child or gifted family member. Specifically, among those teachers who had such a familial relationship with a gifted individual, this factor was not found to be an indicator of having positive attitudes toward the gifted. These results were not supported by the findings of previous quantitative studies, where researchers found that having a gifted child can be a predictor of teachers' positive attitudes toward the gifted (e.g., Bégin & Gagné, 1994; Chipeco, 2004; Jung, 2014). This is based on the idea that having a gifted child can provide individuals with close experiential contact with giftedness, which may inspire and/or motivate them to have greater understanding of or be more likely to

have investigated giftedness (Jung, 2014). One possible explanation for this difference in the current study's findings could be that those respondents who indicated having a gifted child or gifted family member had less understanding of giftedness and its development due to the lesser understanding of giftedness in Saudi Arabia overall. For example, most of the teachers who indicated they have a gifted child did not state that their children had been identified as gifted while of school age, nor did they indicate they had received gifted services, and finally, they did not specify the gifted characteristics of their children. In fact, most indicated that they believed that their child was gifted due to their abilities in academics (e.g., math), their superior athletic ability, and/or their creative or artistic traits. Similarly, teachers who self-identified as gifted in the current study may have limited understanding overall of giftedness and what it means--due to Saudi culture--which might cause them to be less aware of what giftedness means to their own children or to any child.

Furthermore, the results of the multiple regression analysis of the examination of the relationship between teachers' attitudes on the first subscale (i.e., support and needs of gifted children) and the predictor variable (self-perception as gifted), found that there was a positive relationship between teachers attitudes toward the needs of gifted students and self-identification as gifted; however, it was not positive to a great enough degree that we could assert that their self-identification as gifted significantly affected their positive attitudes toward the needs of the gifted. This finding mirrors that of previous research, such as that conducted by McCoach and Siegle (2007) but was somewhat contradicted by the findings of a few other studies (e.g., Bégin & Gagné, 1994; Chipego, 2004). For example, Chipego's (2004) study, which used the same type of questionnaire as the current study, investigated the attitudes of 392 general education elementary school teachers in Pennsylvania toward the needs of gifted students' subscale and

different characteristics of the teachers, including self-rating as gifted, that might predict their overall attitudes. The Chipeco (2004) study found that teachers' self-rating as gifted was a significant predictor of their attitudes toward the needs of gifted students. However, in the current study, the examination of the attitudes of the teachers on the second subscale (level of opposition) did find a significant relationship between teachers' self-identification as gifted and their attitudes on the subscale. Specifically, teachers who self-identified as gifted showed significantly less opposition toward providing special services to gifted students than did those teachers who had self-identified as not gifted. In other words, respondents who had self-identified as gifted were more supportive of (showed less opposition in their responses to) providing special services to the gifted than did respondents who had self-identified as "not gifted."

Additionally, multiple regression analyses were conducted on the two subscales of rejection of gifted students and school acceleration to investigate whether there was any relationship between teachers' attitudes on these subscales and the demographic characteristics of the respondents. From these analyses, the study found no relationship between respondents' attitudes on these two subscales and the demographic characteristics of: (a) "having training in gifted education," (b) "having experience teaching/working with the gifted," (c) "having a gifted child or family member," and (d) "self-identifying as gifted or not gifted." These results could be explained by the fact that in the current study, teachers were found to be ambivalent in terms of their attitudes on these two subscales. In addition, another possible explanation for the lack of relationship might be that there were other demographic characteristics that were beyond the scope of the current study that might have been impacting the teachers and that might have led to their ambivalent attitudes toward these subscales (e.g., teachers' level of education). Again, this

might be related to the fact that gifted education in Saudi Arabia is still developing; gifted programs and identification practices are not available in every school, meaning that teachers in general may not have enough experience working with and teaching gifted students.

Perceptions of Giftedness

Previous research has shown that teachers with positive perceptions toward and awareness of giftedness and gifted students' developmental needs are better able to recognize and meet the different needs of gifted students, which in turn will help these students reach their full potential (e.g., Baudson & Preckel, 2016; Carrington & Bailey, 2000; Moon & Brighton, 2008; Speirs Neumeister et al., 2007). Therefore, one of the goals of this study was to examine teachers' perceptions of giftedness. In general, most of the respondents showed some lack of awareness regarding the unique social-emotional needs of the gifted, but they did indicate some understanding of giftedness as a multifaceted construct and of the fact that gifted students need support to meet their needs. The respondents recognized that all children have affective needs, but did not recognize that the affective needs of gifted students are unique. This might explain the findings where the respondents appeared to have a limited understanding of the specific, unique affective needs of gifted students. For example, the respondents did not seem to be aware of negative traits that the gifted might have that would require support; they focused on positive characteristics only (e.g., self-direction), and did not understand that traits such as perfectionism, while causing the child to excel academically might also create undue anxiety and stress for gifted children. Two themes emerged from analysis of the teachers' responses to the qualitative questions: (a) the multifaceted nature of giftedness, and (b) additional environmental support is needed to meet the affective needs of the gifted.

Findings from the qualitative analysis of the survey's open-ended questions revealed that, despite the respondents indicating that they recognize giftedness as multifaceted, some of their answers indicated a perception that giftedness solely involves high cognitive ability and/or creativity, which ignores the unique affective development of gifted students. This view of giftedness is representative of the general attitude toward giftedness in the Saudi context, where giftedness is only considered as being related to high mental ability (Alamer, 2014; Batterjee, 2013). These findings support previous studies that showed that giftedness in the Saudi context is only seen and met in terms of academic and cognitive development (Alamer, 2014; Aljughaiman & Ayoub, 2017; Aljughaiman & Tan, 2009; Faisal & Ghani, 2015). In addition, the current study revealed that teachers' views on giftedness were influenced by the individual's own culture and interests, which was also supported by the findings of previous studies (e.g., Davis et al., 2011; Freeman, 2005; Grubb, 2008). For example, in the current study, some of the respondents stated that giftedness is a gift from God, which could be related to the strong influence of Islam on Saudi culture and, by extension, the Saudi school system. According to Aljughaiman and Grigorenko (2013), even the modern Saudi educational system was built upon "a strong orientation toward Islamic roots and societal values, with learning and teaching based on the requisite that, no matter the academic subject, the Islamic faith is developed and maintained" (p. 308).

Additionally, the current study revealed that teachers' understanding of the affective developmental needs of gifted students was limited, as the teachers seemed to only recognize positive social and emotional traits of the gifted. This means that they lacked understanding of social and emotional issues that have been identified as creating difficulties for gifted children, such as anxiety. The majority of the teachers expressed a belief that the gifted possess certain

positive characteristics (e.g., strong social skills, good sense of humor, a love of being helpful, high curiosity, self-assurance, cleverness, and self-motivation). Conversely, the teachers exhibited very limited understanding of negative characteristics commonly associated with giftedness (e.g., emotional intensity). This limited view of the affective needs of gifted students has also been noted by previous studies. For example, Moon and Brighton (2008), in their study of 434 general education teachers, also found that participants had a lesser understanding of giftedness and identified more positive characteristics of giftedness than negative ones. Another relevant study, conducted by Speirs Neumeister et al. (2007), involved 27 general education teachers working with an under-represented population of gifted (e.g., gifted individuals of low socio-economic status). The researchers in the Speirs Neumeister et al. (2007) study found that their participants were unaware of environmental factors that influence gifted students and were more likely to identify the positive characteristics of gifted behavior more than the negative ones. One possible explanation for the views of the teachers in the current study might be due to the tendency of some gifted students to adjust their behaviors and reactions to be socially accepted. This trait of the gifted was described by Betts and Neihart (1988) as one of the six profile types of giftedness that some gifted students might have, where the researchers noted that some gifted students learn to hide their needs or their true selves, to achieve social acceptance.

Furthermore, this absence of an understanding of the social and emotional issues of the gifted on the part of the respondents in this study could be explained by the perceptions of some of the teachers that being gifted in some way shields individuals from having such issues, as when some respondents suggested that gifted students' high intellectual ability gives them an advantage in their social adjustment. This view was also found in a qualitative case study that was conducted by S. Gallagher et al. (2011) with 26 general education teachers and four gifted

education teachers, where some of the teachers indicated that a child's giftedness limits the possibility of their having social and emotional problems.

The current study also revealed that most of the teachers recognized the importance of the environment in supporting the social and emotional development of gifted students. Most of the teachers stated that it is important gifted students receive motivation and academic support both inside and outside of school to support their social and emotional adjustment, specifying that these needs cannot be met solely by the school. However, while the results of the current study revealed that most of the teachers recognized the importance of both school and family in the lives of gifted students, a few of the teachers stated that parents should have a greater role in supporting the healthy social and emotional development of their children because parents – versus schools--are more knowledgeable regarding their children; these teachers also stated that schools should only be responsible for meeting the academic needs of gifted students. This finding is in line with the previously referenced study by S. Gallagher et al. (2011), where some of the general education teachers who participated indicated that parents have more of a role in fostering the healthy social and emotional development of gifted students, due to the limited time gifted students spend at school. Likewise, these teachers believed that social-emotional needs fall more under the umbrella of *parenting*, which is primarily the realm of parents, rather than *educating*, which they deem to be primarily the realm of schools (Chessor & Whitton, 2008, as cited in S. Gallagher et al., 2011). Despite the seeming lack of awareness in the general education teachers' perspectives regarding the specific social and emotional needs of gifted students, the findings of the current study suggest that Saudi teachers still understand the importance of meeting and addressing the positive affective needs of these students in both the school and home.

Implications for Practice

Implications for Saudi Educators

General education teachers' attitudes and perceptions as related to giftedness and gifted education are well established as factors that may impact the development of gifted students and the success of the delivery of gifted services. The findings of this study established that, overall, the general education elementary school teachers who responded exhibited positive attitudes toward supporting the needs of gifted students and toward providing special services to gifted students. These findings are a good indicator of teachers' willingness to support gifted students' cognitive and affective development. However, the findings also indicated that the teachers had a limited view of giftedness and what is involved in supporting the development of giftedness in students. Therefore, these findings suggest that it is important to provide Saudi teachers – both pre-service and in-service – with training and professional development on gifted students' cognitive and affective needs. Researchers have stressed the importance of such professional development for all educators, due to the strong relationship such training and understanding has on the overall success of gifted students (Bangel et al., 2010; Reis & Renzulli, 2010).

Professional development concerning the gifted should include an examination of the affective characteristics of gifted children (e.g., sensitivity, self-awareness, emotional depth, and intensity) and how instruction can be adjusted to ensure these children can achieve to their potential while minimizing issues that often arise, such as anxiety. This type of broader professional development, that doesn't just focus on the advanced academic needs of the gifted, can provide teachers with an understanding of appropriate services and instructional methods to meet the unique abilities and needs of these students. Further, the findings of this study indicated that while some teachers recognized the positive social and emotional aspects of giftedness (e.g.,

high curiosity, self-direction), the teachers' responses indicated that they were not aware that tendencies they perceived as positive, such as perfectionism, could lead to issues. It is important that teachers are made knowledgeable--through coursework, training, and professional development – about the unique affective characteristics of the gifted, especially those characteristics that may lead to issues like stress and anxiety. Moreover, teachers need training in how to recognize these characteristics in students, as well how to help their students cope with issues that may arise from their unique affective characteristics (Peterson, 2015).

Finally, this study was designed to explore these areas of gifted education in the Saudi context. While many practices for supporting the gifted might seem to be easily applied to any context, it is important and necessary for this researcher to consider the Muslim identity and the influence of Islam on all facets of Saudi culture when proposing policy and practice based on the findings of this study. Some of the teachers' responses on the open-ended questions highlight how the Saudi culture influences Saudi citizens' attitudes and perceptions of giftedness, such as the responses that described giftedness as a gift from God. Such responses point to the fact that it is important when improving Saudi programs for the gifted and teacher education/training programs, that the Saudi culture is also given attention, so adaptation of gifted curricula or programs from others countries is accepted in the country but also so that it supports the unique nature of Saudi gifted children.

Implications for All Educators

The findings of this study suggest that more training in gifted education is needed for general education teachers, not only regarding basic information on gifted instruction, but also on how to meet both the academic and affective needs of these students through the employment of evidence-based practices. Training general education teachers in evidence-based gifted

education practices like acceleration can provide them with cost-effective, practical methods of meeting gifted students' academic and affective needs (Assouline et al., 2015; Colangelo et al., 2004). Furthermore, teachers need training in how to recognize the affective characteristics in gifted students, as well how to help their students cope with issues that may arise from their unique affective characteristics (Peterson, 2015). Training general education teachers should provide them with different learning opportunities that help them to recognize that gifted students require greater challenges in the classroom than their typical peers. In addition, such training should also support general education teachers in understanding that such students must also be monitored for negative outcomes related to their tendencies toward perfectionism and greater stress over things such as test results and overall grades.

Policy makers and educators also need to be aware that there are many ways to assess giftedness and deliver gifted instruction and that these realities must be taken into consideration within school systems. Davis et al. (2011) provided some guidelines and stated some assumptions that educators should consider when developing gifted education curricula and programs:

1. All students should experience high quality, engaging, and intellectually challenging curricula that meet their present and future academic needs.
2. Since the needs of gifted students are different from those of their typical peers, standard curricula must be adapted to accommodate these needs,
3. As gifted students move toward expertise in a discipline, the level of intellectual demand provided to [them] should increase in accordance with [their] individual growth.

4. All high-quality curriculum should contain key components to make the material meaningful to gifted students,
 5. Appropriate curricular activities should be cover the following areas: cognitive (e.g., their precocity), affective (e.g., their motivational intensity), and social.
- (Davis et al., 2011, p. 116)

Additionally, educators should understand that gifted programs must be created as “multifaceted services” for gifted students that focus on their learning needs as well as their affective development, rather than simply supporting their advanced intellectual abilities (T. Cross, 2017, p. 70).

Limitations and Suggestions for Future Research

Overall, the results of this study for the selected sample were consistent with previous research done in different countries. Although the participants in the study were all general education elementary school teachers who came from different regions of Saudi Arabia, the vast majority of the teachers taught in just four regions of the country. Therefore, caution is needed when generalizing the results of the study to all of Saudi Arabia. Future research should investigate general education teachers’ attitudes and perceptions regarding the gifted and gifted education in other parts of the country. Additionally, participants in future studies should include teachers who teach at the middle and secondary levels. Another limitation of the current study was the sampling method; this study used convenience sampling due to the researcher’s accessibility to the target population and the limited time that the researcher had. One of the drawbacks of using this method for the current study is that around 36% of the participants self-identified as gifted, which seems high. Therefore, it is recommended that future research employ a different method, such as random sampling. Furthermore, the questionnaire utilized for this

research is also a limitation. Even though the survey has been employed in different cultures/countries, it appeared that some subscales of the survey were sensitive to some of the number of items and/or cultural setting (e.g., *social value* and *ability grouping*). Additional research should be conducted on the reliability and validity of the instrument with a larger number of respondents, especially when the instrument is translated into different languages or presented in different cultural contexts than the original. Furthermore, it is recommended that in the future, researchers consider using only four subscales instead of the full six, due to the relationship between the subscales and the sensitivity of the items within each subscale. For example, McCoach and Siegle (2007) conducted additional statistical tests to confirm the validity of the original questionnaire using the multivariate software EQS 6.1; they reorganized the 34 items in the original test into four new subscales: Support, Elitism, Acceleration, and Perception.

The results of the current study and of previous research also show that teachers' attitudes and perceptions of giftedness vary based on their individual beliefs, backgrounds, and demographic characteristics. It is, therefore, recommended that future research obtain more and different demographic information from respondents, such as teachers' level of education and their school population's socio-economic status, to investigate whether there are other relationships between teachers' characteristics and their attitudes/perceptions that could explain their attitudes toward and level of support for expanding and improving gifted education programs and instruction. In addition, there is a need to do a qualitative study that solely investigates the perceptions of Saudi general education teachers regarding the social and emotional needs and development of gifted students. Conducting such a study would provide

greater depth about how teachers perceive the affective needs of gifted students and how their perceptions may influence gifted students' social and emotional development.

Conclusion

Previous research has failed to come to agreement regarding the overall attitudes of general education teachers on giftedness and gifted education; the results have been mixed, ranging from positive to negative to a mixture of the two. In addition, it is not possible to achieve agreement in the literature regarding individual factors that can be identified as shaping teachers' attitudes toward the gifted and their needs. As a result, researchers in the field of gifted education have emphasized the need for more studies that examine the attitudes and perceptions of general education teachers regarding gifted students and their education. This focus can aid policymakers, administrators, and educators in helping teachers to create a learning environment that better supports the learning and development of gifted students. Therefore, this study was conducted to investigate Saudi teachers' attitudes toward and perceptions of giftedness and gifted education, since little research of this type had been conducted on this topic in Saudi Arabia. The findings of this study addressed a gap in the existing knowledge of gifted education regarding this population of general education elementary school teachers, as it examined Saudi teachers' attitudes toward the gifted and found them to be positive. Moreover, the study examined in part the complex issue of the degree of understanding Saudi teachers have of the unique needs of gifted students as well as their attitudes toward providing gifted students with special services. Additionally, the study obtained information regarding Saudi teachers' understanding of the positive and negative characteristics of giftedness as well as the importance of supporting the unique affective needs of these students. In this area, our findings were mixed as the responses of some expressed a lack of awareness of the unique social and emotional characteristics associated

with giftedness that may result in issues for these students. Such a misunderstanding of some of the characteristics of giftedness (e.g., not understanding that not all gifted characteristics are positive) could result in negative outcomes for gifted students, even when the teachers' attitudes might be considered positive regarding supporting them. For example, the thinking that gifted students are innately socially and emotionally well-adjusted might cause teachers to think that gifted students do not have unique affective needs that might require support. In order to provide a suitable learning environment for gifted students and to help them reach their full potential, schools must have knowledgeable teachers who understand and are supportive of the complex individual needs of each gifted individual. This indicates that more preservice and in-service training in gifted education is needed, especially given that the teachers with training in gifted education in this study recognized both the importance of meeting the unique needs of gifted students in schools and also of providing gifted services to meet their students' needs.

REFERENCES

- Alamer, S. M. (2014). Challenges facing gifted students in Saudi Arabia. *Research on Humanities and Social Sciences*, 4(24), 107-112. <https://www.iiste.org/Journals/index.php/RHSS/article/view/169633>
- Alamiri, F. Y. (2020). Gifted education in Saudi Arabian educational context: A systematic review. *Journal of Arts and Humanities*, 9(4), 68-79. <https://doi.org/10.18533/journal.v9i4.1895>
- Alarfaj, A., & Al-Omair, R. A. L. (2020). The whole grade acceleration policy in the Kingdom of Saudi Arabia and the state of Massachusetts, USA--An analytical comparative study. *International Education Studies*, 13(8), 55-67. <https://doi.org/10.5539/ies.v13n8p55>
- Aljughaiman, A. M., & Ayoub, A. E. A. (2012). The effect of an enrichment program on developing analytical, creative, and practical abilities of elementary gifted students. *Journal for the Education of the Gifted*, 35(2), 153-174. <https://doi.org/10.1177/0162353212440616>
- Aljughaiman, A. M., & Ayoub, A. E. A. (2017). Giftedness in Arabic environments: Concepts, implicit theories, and the contributed factors in the enrichment programs. *Cogent Education*, 4(1). <https://doi.org/10.1080/2331186X.2017.1364900>

- Aljughaiman, A., Ayoub, A., Maajeeny, O., Abuoaf, T., Abunaser, F., & Banajah, S. (2009). *Evaluating gifted enrichment programs in schools in Saudi Arabia*. Ministry of Education.
- Aljughaiman, A. M., & Grigorenko, E. L. (2013). Growing up under pressure: The cultural and religious context of the Saudi system of gifted education. *Journal for the Education of the Gifted*, 36(3), 307-322. <https://doi.org/10.1177/0162353213493153>
- Aljughaiman, A., & Tan, M. (2009). Anxiety in gifted female students in the Kingdom of Saudi Arabia. *Gifted and Talented International*, 24(1), 49-54.
- Alqarni, M. A. (2010). *Evaluation of provisions for gifted students in Saudi Arabia*. University of Wollongong.
- Allodi, W., & Rydelius, P.-A. (2008, September 16-20). *The needs of gifted children in context: A study of Swedish teachers' knowledge and attitudes* [Paper presentation]. The 11th International ECHA of European Council for High Ability, Prague, The Czech Republic.
- Ary, D., Jacobs, L. C., Sorensen, C., & Razavieh, A. (2010). *Introduction to research in education* (8th ed.). Wadsworth Cengage Learning. <http://www.modares.ac.ir/uploads/Agr.Oth.Lib.12.pdf>
- Assouline, S. G., Colangelo, N., VanTassel-Baska, J., & Lupkowski-Shoplik, A. (Eds.). (2015). *A nation empowered: Evidence trumps the excuses holding back America's brightest students* (Vol. 2). Acceleration Institute, Belin-Blank Center, University of Iowa Press.
- Bangel, N. J., Moon, S. M., & Capobianco, B. M. (2010). Preservice teachers' perceptions and experiences in a gifted education training model. *Gifted Child Quarterly*, 54(3), 209-221. <https://doi.org/10.1177/0016986210369257>

- Batterjee, A. A. (2013). The relationship between SES and giftedness in Saudi Arabia. *Mankind Quarterly*, 53(3-4), 3-52. <https://doi.org/10.46469/mq.2013.53.3.4>
- Battistich, V., Watson, M., Solomon, D., Lewis, C., & Schaps, E. (1999). Beyond the three R's: A broader agenda for school reform. *The Elementary School Journal*, 99(5), 415-432. <https://doi.org/10.1086/461933>
- Baudson, T. G., & Preckel, F. (2016). Teachers' conceptions of gifted and average-ability students on achievement-relevant dimensions. *Gifted Child Quarterly*, 60(3), 212-225. <https://doi.org/10.1177/0016986216647115>
- Bégin, J., & Gagné, F. (1994). Predictors of attitudes toward gifted education: A review of the literature and a blueprint for future research. *Journal for the Education of the Gifted*, 17(2), 161-179. <https://doi.org/10.1177/016235329401700206>
- Berk, L. E. (2001). *Development through the lifespan* (2nd ed.). Allyn & Bacon.
- Berk, L. E. (2004). *Development through the lifespan* (3rd ed.). Pearson Education India.
- Berman, K. M., Schultz, R. A., & Weber, C. L. (2012). A lack of awareness and emphasis in preservice teacher training: Preconceived beliefs about the gifted and talented. *Gifted Child Today*, 35(1), 18-26. <https://doi.org/10.1177/1076217511428307>
- Betts, G. T., & Neihart, M. F. (1985). Eight effective activities to enhance the emotional and social development of the gifted and talented. *Roeper Review*, 8(1), 18-23. <https://doi.org/10.1080/02783198509552921>
- Betts, G. T., & Neihart, M. (1988). Profiles of the gifted and talented. *Gifted Child Quarterly*, 32(2), 248-253. <https://doi.org/10.1177/001698628803200202>
- Bhatt, R. (2011). A review of gifted and talented education in the United States. *Education and Finance Policy*, 6(4), 557-582. https://doi.org/10.1162/EDFP_a_00048

- Brigandi, C. B., Weiner, J. M., Siegle, D., Gubbins, E. J., & Little, C. A. (2018). Environmental perceptions of gifted secondary school students engaged in an evidence-based enrichment practice. *Gifted Child Quarterly*, 62(3), 289-305. <https://doi.org/10.1177/0016986218758441>
- Brown, S. W., Renzulli, J. S., Gubbins, J., Siegle, D., Zhang, W., & Chen, C.-H. (2005). Assumptions underlying the identification of gifted and talented students. *Gifted Child Quarterly*, 49(1), 68-79. <https://doi.org/10.1177/001698620504900107>
- Brualdi, A. C. (1996). *Multiple intelligences: Gardner's theory*. ERIC Clearinghouse on Assessment and Evaluation. <https://eric.ed.gov/?id=ED410226>
- Buchanan, R., Gueldner, B. A., Tran, O. K., & Merrell, K. W. (2009). Social and emotional learning in classrooms: A survey of teachers' knowledge, perceptions, and practices. *Journal of Applied School Psychology*, 25(2), 187-203. <https://doi.org/10.1080/15377900802487078>
- Callahan, C. M., Moon, T. R., & Oh, S. (2013). *Status of elementary gifted programs: 2013*. <http://www.nagc.org/sites/default/files/key%20reports/ELEM%20school%20GT%20Survey%20Report.pdf>
- Callahan, C. M., Moon, T. R., & Oh, S. (2017). Describing the status of programs for the gifted: A call for action. *Journal for the Education of the Gifted*, 40(1), 20-49. <https://doi.org/10.1177/0162353216686215>
- Carrington, N. G., & Bailey, S. B. (2000). How do preservice teachers view gifted students?: Evidence from a NSW study. *Australasian Journal of Gifted Education*, 9(1), 18-22.
- Cattell, R. B. (1963). Theory of fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology*, 54(1), 1.

- Chessor, D., & Whitton, D. (2008). The impact of grouping gifted primary school students on self concept and achievement. *TalentED*, 25(2), 7-19.
- Chipeco, A. D. (2004). *Factors associated with the attitudes of elementary level classroom teachers toward gifted education* (UMI No. 3120729) [Doctoral dissertation, Widener University]. Dissertation Abstracts International.
- Chou, S. (2013, December 11). *Director's corner: The psychosocial development of gifted children*. [https://www.newtown.k12.ct.us/_theme/files/Gifted%20Education/ThePsychosocial.Development.of.Gifted.Children%20\(1\).pdf](https://www.newtown.k12.ct.us/_theme/files/Gifted%20Education/ThePsychosocial.Development.of.Gifted.Children%20(1).pdf)
- Colangelo, N., Assouline, S. G., & Gross, M. U. M. (Eds.). (2004). *A nation deceived: How schools hold back America's brightest students: The Templeton National report on acceleration*: (ED535137). ERIC. <https://eric.ed.gov/?id=ED535137>
- Colangelo, N., & Davis, G. A. (2003). *Handbook of gifted education* (3rd ed.). Allyn and Bacon.
- Coleman, L. J., & Cross, T. L. (2014). Is being gifted a social handicap?. *Journal for the Education of the Gifted*, 37(1), 5-17. <https://doi.org/10.1177/0162353214521486>
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98-104. <https://doi.org/10.1037/0021-9010.78.1.98>
- Costa, A. L., & Kallick, B. (Eds.). (2008). *Learning and leading with habits of mind: 16 essential characteristics for success*. ASCD.
- Cramond, B., & Martin, C. E. (1987). Inservice and preservice teachers' attitudes toward the academically brilliant. *Gifted Child Quarterly*, 31(1), 15-19. <https://doi.org/10.1177/001698628703100103>
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE.

- Cross, T. L. (1997). Psychological and social aspects of educating gifted students. *Peabody Journal of Education*, 72(3-4), 180-200. https://doi.org/10.1207/s15327930pje7203&4_11
- Cross, T. L. (2001). Social/Emotional needs: Gifted children and Erikson's theory of psychosocial development. *Gifted Child Today*, 24(1), 54-55. <https://doi.org/10.4219/gct-2000-522>
- Cross, T. (2017). *On the social and emotional lives of gifted children*. Sourcebooks. <https://doi.org/10.1002/j.1556-6676.2015.00192.x>
- Cross, J. R., Cross, T., & Frazier, A. D. (2013). Student and teacher attitudes toward giftedness in a two laboratory school environment: A case for conducting a needs assessment. *NALS Journal*, 5(1), 1.
- Danielian, J. (2016, July 7). *A bill of rights for gifted children*. National Association for Gifted Children. <https://www.nagc.org/blog/bill-rights-teachers-gifted-students>
- David, A. H. (2005). *Webster's new world essential vocabulary*. Wiley.
- Davis, G. A., Rimm, S. B., & Siegle, D. B. (2011). *Education of the gifted and talented*. Pearson.
- DeCoster, J. (2007). *Applied linear regression notes set 1*. Retrieved June 6, 2021, from <http://www.stat-help.com/cohen%202007-11-13.pdf>
- Derryberry, W. P., & Barger, B. (2008). Do contributors to intellect explain the moral judgment abilities of gifted youth?. *Gifted Child Quarterly*, 52(4), 340-352. <https://doi.org/10.1177/0016986208321806>
- de Souza Fleith, D. (2000). Teacher and student perceptions of creativity in the classroom environment. *Roeper Review*, 22(3), 148-153. <https://doi.org/10.1080/02783190009554022>

- Donerlson, E. (2008). *Elementary school teachers' attitudes and beliefs toward teaching gifted students in heterogeneous classrooms* [Doctoral dissertation, Walden University].
- Duffy, M. E. (2006). Resources for determining or evaluating sample size in quantitative research reports. *Clinical Nurse Specialist*, 20(1), 9-12. <https://doi.org/10.1097/00002800-200601000-00004>
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432. <https://doi.org/10.1111/j.1467-8624.2010.01564.x>
- Dybå, T., Kampenes, V. B., & Sjøberg, D. I. K. (2006). A systematic review of statistical power in software engineering experiments. *Information and Software Technology*, 48(8), 745-755. <https://doi.org/10.1016/j.infsof.2005.08.009>
- Eby, J. W., & Smutny, J. F. (1990). *A thoughtful overview of gifted education*. Longman.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Faisal, A. S., & Ghani, M. Z. B. (2015). The concept of motivation from student's perspective: A study of gifted students in Jeddah Saudi Arabia. *International Journal of Research in Social Sciences*, 5(5), 518-531.
- Field, A. (2009). *Discovering statistics using SPSS*: Sage.
- Freeman, J. (2005). Permission to be gifted: How perceptions of giftedness can change lives. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 80-97). <https://doi.org/10.1017/CBO9780511610455.007>

- Gagné, F. (1991). Brief presentation of Gagné and Nadeau's attitude scale: Opinions about the gifted and their education [Unpublished manuscript]. Université du Québec à Montréal.
- Gagné, F., & Nadeau, L. (1985). Dimensions of attitudes toward giftedness. In A. H. Roldan (Ed.), *Gifted and talented children, youth and adults: Their social perspective and culture* (pp.148-170). Trillium.
- Galbraith, J., & Delisle, J. (2015). *When gifted kids don't have all the answers: How to meet their social and emotional needs*. Free Spirit Publishing.
- Gallagher, J. J. (2000). Unthinkable thoughts: Education of gifted students. *Gifted Child Quarterly*, 44(1), 5-12. <https://doi.org/10.1177/001698620004400102>
- Gallagher, J. J. (2008). Psychology, psychologists, and gifted students. In S. I. Pfeiffer (Ed.), *Handbook of giftedness in children: Psychoeducational theory, research, and best practices* (pp. 1-11). Springer.
- Gallagher, S., Smith, S. R., & Merrotsy, P. (2011). Teachers' perceptions of the socioemotional development of intellectually gifted primary aged students and their attitudes towards ability grouping and acceleration. *Gifted and Talented International*, 26(1-2), 11-24. <https://doi.org/10.1080/15332276.2011.11673585>
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. BasicBooks.
- Gardner, H. (1993). *Multiple intelligences: The theory in practice*. BasicBooks.
- Gardner, H., Kornhaber, M. L., & Wake, W. K. (1996). *Intelligence: Multiple perspectives*. Harcourt Brace College.
- Geake, J. G., & Gross, M. U. (2008). Teachers' negative affect toward academically gifted students: An evolutionary psychological study. *Gifted Child Quarterly*, 52(3), 217-231. <https://doi.org/10.1177/0016986208319704>

- General Authority for Statistics. (2017). *Number of public and private schools by educational level*. Kingdom of Saudi Arabia. <https://www.stats.gov.sa/ar/5800>
- George, D., & Mallery, P. (2008). *SPSS for windows step by step: A simple guide and reference: 15.0 update* (8th ed.). Pearson A & B.
- Goldstein, S. (2015). The evolution of intelligence. In S. Goldstein., D. Princiotta, & J. A. Naglieri (Eds). *Handbook of intelligence* (pp. 3-7). Springer. https://doi.org/10.1007/978-1-4939-1562-0_1
- Gross, M. U. M. (2006). Exceptionally gifted children: Long-term outcomes of academic acceleration and nonacceleration. *Journal for the Education of the Gifted*, 29(4), 404-429. <https://doi.org/10.4219/jeg-2006-247>
- Grubb, K. (2008). *Examination of the experiences of gifted preschool and primary age children* (Doctoral dissertation, RMIT University). <https://www.rmit.edu.au/library>.
- Hanninen, G. E. (1988). A study of teacher training in gifted education. *Roeper Review*, 10(3), 139-144. <https://doi.org/10.1080/02783198809553109>
- Hargreaves, A. (2001). *Changing teachers, changing times: Teachers' work and culture in the postmodern age*. Continuum.
- Harrell, F. E., Jr. (2015). *Regression modeling strategies: with applications to linear models, logistic and ordinal regression, and survival analysis*. Springer.
- Hébert, T. P. (2011). *Understanding the social and emotional lives of gifted students*. Prufrock.
- Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches* (7th ed.). SAGE.

- Jung, J. Y. (2014). Predictors of attitudes to gifted programs/provisions: Evidence from preservice educators. *Gifted Child Quarterly*, 58(4), 247-258. <https://doi.org/10.1177/0016986214547636>
- Justman, J., & Wrightstone, J. W. (1956). The expressed attitudes of teachers toward special classes for intellectually gifted children. *Education Administration and Supervision*, 42, 141-148.
- Kerr, B. (Ed.). (2009). *Encyclopedia of giftedness, creativity, and talent: Vol. 1* (2nd ed). Sage.
- Kohlberg, L., & Hersh, R. H. (1977). Moral development: A review of the theory. *Theory Into Practice*, 16(2), 53-59. <https://doi.org/10.1080/00405847709542675>
- Lamont, R. T. (2012). The fears and anxieties of gifted learners: Tips for parents and educators. *Gifted Child Today*, 35(4), 271-276. <https://doi.org/10.1177/1076217512455479>
- Lassig, C. J. (2003). *Teachers' attitudes towards intellectually gifted children and their education* (Order No. 14463) [Doctoral dissertation, Griffith University]. QUT ePrints.
- Lassig, C. (2009). Teachers' attitudes towards the gifted: The importance of professional development and school culture. *Australasian Journal of Gifted Education*, 18(2), 32-42. <https://eprints.qut.edu.au/32480/>
- Lee, S.-Y., & Olszewski-Kubilius, P. (2006). The emotional intelligence, moral judgment, and leadership of academically gifted adolescents. *Journal for the Education of the Gifted*, 30(1), 29-67. <https://doi.org/10.1177/016235320603000103>
- Leedy, P. D., & Ormrod, J. E. (2001). *Practical research: Planning and design* (7th ed.). Merrill Prentice Hall and SAGE.
- Lewis, J. D. (1994). Self-actualization in gifted children. *Psychological Reports*, 74(3), 767-770. <https://doi.org/10.2466/pr0.1994.74.3.767>

- Lind, S. (2001). Overexcitability and the gifted. *The SENG Newsletter*, 1(1), 3-6. <https://www.westminsterpublicschools.org/cms/lib03/CO01001133/Centricity/Domain/21/Overexcitability%20and%20the%20Gifted.pdf>
- Marland, S. (1972). *Education of the gifted and talented –Volume 1: Report to the Congress of the United States by the U.S. Commissioner of Education* (ED056243). ERIC. <https://eric.ed.gov/?q=ED056243&id=ED056243>
- Mawhiba. (1997). *Gifted definition of the Saudi Ministry of Education*. <https://services.mawhiba.org/MAWHIBA/pages/SubjectDetails.aspx?SuId=198>
- McCoach, D. B., & Siegle, D. (2007). What predicts teachers' attitudes toward the gifted?. *Gifted Child Quarterly*, 51(3), 246-254. <https://doi.org/10.1177/0016986207302719>
- Megay-Nespoli, K. (2001). Beliefs and attitudes of novice teachers regarding instruction of academically talented learners. *Roeper Review*, 23(3), 178-182. <https://doi.org/10.1080/02783190109554092>
- Mendaglio, S., & Tillier, W. (2006). Dabrowski's theory of positive disintegration and giftedness: Overexcitability research findings. *Journal for the Education of the Gifted*, 30(1), 68-87. <https://doi.org/10.1177/016235320603000104>
- Miedijensky, S. (2018). Learning environment for the gifted--What do outstanding teachers of the gifted think? *Gifted Education International*, 34(3), 222–244. <https://doi.org/10.1177/0261429417754204>
- Miller, E. M. (2009). The effect of training in gifted education on elementary classroom teachers' theory-based reasoning about the concept of giftedness. *Journal for the Education of the Gifted*, 33(1), 65-105. <https://doi.org/10.1177/016235320903300104>

- Ministry of Education. (2016). *Programs and projects of the general administration of giftedness*. Kingdom of Saudi Arabia. <https://departments.moe.gov.sa/EducationAgency/RelatedDepartments/Giftedtalented/Girls/SiteAssets/Pages/برامج-ومشاريع-الإدارة-العامة-/اللموهوبات/برامج%20الإدارة%20العامة%20لللموهوبات.pdf>
- Moon, T. R., & Brighton, C. M. (2008). Primary teachers' conceptions of giftedness. *Journal for the Education of the Gifted*, 31(4), 447-480. <https://doi.org/10.4219/jeg-2008-793>
- Morelock, M. J. (1992). Giftedness: The view from within. *Understanding Our Gifted*, 4(3), 11-15. <http://www.davidsongifted.org/search-database/entry/a10172>
- National Association for Gifted Children. (n.d.-a). *Glossary of terms: Social-emotional needs*. Author. <https://www.nagc.org/resources-publications/resources/glossary-terms>
- National Association for Gifted Children. (n.d.-b). *Tests and assessments*. Author. <https://nagc.org/resources-publications/gifted-education-practices/identification/tests-assessments>
- National Association for Gifted Children. (2010). Redefining giftedness for a new century: Shifting the paradigm. *Journal of Advanced Academics*, 22(1), 6.
- National Association for Gifted Children and The Council of State Directors of Programs for the Gifted. (2015). *Summary of the 2014-2015 state of the states in gifted education report*. <https://www.nagc.org/sites/default/files/key%20reports/2014-2015%20State%20of%20the%20States%20summary.pdf>
- Neihart, M., & Betts, G. T. (2010). Revised profiles of the gifted and talented. Retrieved June 6, 2021, from <https://www.danacopeconsulting.com/uploads/1/7/6/4/17643425/betts-revised-profiles.pdf>

- Neihart, M., Reis, S. M., Robinson, N. M., & Moon, S. M. (Eds.). (2002). *The social and emotional development of gifted children: What do we know?*. The National Association for the Gifted. Prufrock Press.
- Nelson, K. C. (1989). Dabrowski's theory of positive disintegration. *Advanced Development, 1*, 1-14.
- Olenchak, F. R. (2009). Creating a life: Orchestrating a symphony of self, a work always in progress. In J. L. Van Tassel-Baska, T. L. Cross, & F. R. Olenchak (Eds.), *The critical issues in equity and excellence in gifted education series. Social-emotional curriculum with gifted and talented students* (pp. 41-77). Prufrock Press.
- Pahl, K. M., & Barrett, P. M. (2007). The development of social–emotional competence in preschool-aged children: An introduction to the fun FRIENDS program. *Journal of Psychologists and Counsellors in Schools, 17*(1), 81-90. <https://doi.org/10.1375/ajgc.17.1.81>
- Paine, L. (1990). *Orientation towards diversity: What do prospective teachers bring?* (ED320903). ERIC. <https://eric.ed.gov/?id=ED320903>
- Peachman, M. C. (1942). Attitudes: their significance in education for the gifted. *Journal of Educational Psychology, 33*(3), 183.
- Perković Krijan, I., & Borić, E. (2015). Teachers' attitudes towards gifted students and differences in attitudes regarding the years of teaching. *Croatian Journal of Education, 17*(3), 165-178. <https://doi.org/10.15516/cje.v17i3.1199>
- Peterson, J. S. (2015). School counselors and gifted kids: Respecting both cognitive and affective. *Journal of Counseling & Development, 93*(2), 153-162. <https://doi.org/10.1002/j.1556-6676.2015.00191.x>

- Piaget, J. (1963/2013). *Origin of intelligence in the child: Selected works* (Vol. 3). Routledge.
- Piechowski, M. M., & Chucker, J. (2011). Overexcitabilities. In M. A. Runco & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (2nd ed, pp. 202-208). Academic Press/ Elsevier.
<https://doi.org/10.1016/B978-0-12-375038-9.00165-5>
- Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social sciences: Analyses with SAS and IBM's SPSS*. Routledge.
- Plunkett, M. (2000). Education [*sic*] teachers to meet the needs of gifted students: An option or a necessity?. *TalentEd*, 9-16. <https://research.monash.edu/en/publications/education-teachers-to-meet-the-needs-of-gifted-students-an-option>
- Polyzopoulou, K., Kokaridas, D., Patsiaouras, A., & Gari, A. (2014). Teachers' perceptions toward education of gifted children in Greek educational settings. *Journal of Physical Education and Sport*, 14(2), 211-221. <https://doi.org/10.7752/jpes.2014.02033>
- Portešová, Š., Budíková, M., & Koutková, H. (2011). Crucial determinants affecting the attitude of Czech educators toward education of extraordinarily gifted learners. *The New Educational Review*, 24(2), 305-326.
- Pyryt, M. C. (2008). The Dabrowskian lens: Implications for understanding gifted individuals. In S. Mendaglio (Ed.), *Dabrowski's theory of positive disintegration* (pp. 175-182). Great Potential Press.
- Reis, S. M., & Renzulli, J. S. (2004). Current research on the social and emotional development of gifted and talented students: Good news and future possibilities. *Psychology in the Schools*, 41(1), 119–130. <https://doi.org/10.1002/pits.10144>

- Reis, S. M., & Renzulli, J. S. (2010). Is there still a need for gifted education? An examination of current research. *Learning and Individual Differences*, 20(4), 308-317. <https://doi.org/10.1016/j.lindif.2009.10.012>
- Renzulli, J. S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, 60(3), 180.
- Renzulli, J. S. (1979). *What makes giftedness?: A reexamination of the definition of the gifted and talented*. Ventura County Superintendent of Schools. <https://eric.ed.gov/?id=ED177784>
- Renzulli, J. S. (2003). The three-ring conception of giftedness: Its implications for understanding the nature of innovation. In L. V. Shavinina (Ed.), *The international handbook on innovation* (pp. 79-96). Pergamon/Elsevier. <https://doi.org/10.1016/B978-008044198-6/50007-3>
- Renzulli, J. S. (2004). Introduction to identification of students for gifted and talented programs. In J. S. Renzulli (Ed.) & S. M. Reis (Series Ed.), *Essential readings in gifted education: Identification of students for gifted and talented programs* (pp. 23-34). Corwin Press and the National Association for Gifted Students. https://au.corwin.com/sites/default/files/upm-assets/7027_book_item_7027.pdf
- Renzulli, J. S. (2005). The three-ring conception of giftedness: A developmental model for promoting creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 246-279). Cambridge University Press. <https://doi.org/10.1017/CBO9780511610455.015>

- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st century: A four-part theoretical approach. *Gifted Child Quarterly*, 56(3), 150-159. <https://doi.org/10.1177/0016986212444901>
- Rimm, S. B., Siegle, D. B., & Davis, G. A. (2018). *Education of the gifted and talented* (7th ed.). Pearson.
- Rinn, A. N., & Bishop, J. (2015). Gifted adults: A systematic review and analysis of the literature. *Gifted Child Quarterly*, 59(4), 213-235. <https://doi.org/10.1177/0016986215600795>
- Ritchotte, J. A., & Graefe, A. K. (2017). An alternate path: The experience of high-potential individuals who left school. *Gifted Child Quarterly*, 61(4), 275-289. <https://doi.org/10.1177/0016986217722615>
- Robinson, N. M., Zigler, E., & Gallagher, J. J. (2000). Two tails of the normal curve: Similarities and differences in the study of mental retardation and giftedness. *American Psychologist*, 55(12), 1413-1424. <https://doi.org/10.1037/0003-066X.55.12.1413>
- Russell, J. L. (2018). High school teachers' perceptions of giftedness, gifted education, and talent development. *Journal of Advanced Academics*, 29(4), 275-303. <https://doi.org/10.1177/1932202X18775658>
- Sak, U. (2004). About creativity, giftedness, and teaching the creatively gifted in the classroom. *Roeper Review*, 26(4), 216-222. <https://doi.org/10.1080/02783190409554272>
- Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension*, 37(2), 1-5.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment*, 8(4), 350-353. <https://doi.org/10.1037/1040-3590.8.4.350>

- Schroth, S. T., & Helfer, J. A. (2009). Practitioners' conceptions of academic talent and giftedness: Essential factors in deciding classroom and school composition. *Journal of Advanced Academics*, 20(3), 384-403. <https://doi.org/10.1177/1932202X0902000302>
- Scott, A. J. (2000). *The cultural economy of cities: Essays on the geography of image-producing industries*. Sage. <https://doi.org/10.4135/9781446217481>
- Shapiro, A. (2003). *Everybody belongs: Changing negative attitudes toward classmates with disabilities (Critical education practice)*. Routledge.
- Shaunessy, E. (2003). State policies regarding gifted education. *Gifted Child Today*, 26(3), 16-65. <https://doi.org/10.4219/gct-2003-103>
- Siegle, D., Moore, M., Mann, R. L., & Wilson, H. E. (2010). Factors that influence in-service and preservice teachers' nominations of students for gifted and talented programs. *Journal for the Education of the Gifted*, 33(3), 337-360. <https://doi.org/10.1177/016235321003300303>
- Siegle, D., Wilson, H. E., & Little, C. A. (2013). A sample of gifted and talented educators' attitudes about academic acceleration. *Journal of Advanced Academics*, 24(1), 27-51. <https://doi.org/10.1177/1932202X12472491>
- Silverman, L. K. (1994). The moral sensitivity of gifted children and the evolution of society. *Roeper Review*, 17(2), 110-116. <https://doi/10.1080/02783199409553636>
- Silverman, L. K. (1998). Personality and learning styles of gifted children. In J. Van Tassel-Baska (Ed.), *Excellence in educating gifted & talented learners* (3rd ed., pp. 29-65). Love Publishing. <https://eric.ed.gov/?id=ED414691>
- Silverman, L. K. (2000). Social development in the gifted. *Mensa Research Journal*, 43(Winter), 33-40.

- Silverman, L. K. (2009). My love affair with Dabrowski's theory: A personal odyssey. *Roeper Review*, 31(3), 141-149. <https://doi.org/10.1080/02783190902993912>
- Skrivanek, S. (2009). *The use of dummy variables in regression analysis* [Paper]. MoreSteam. <https://www.moresteam.com/WhitePapers/download/dummy-variables.pdf>
- Speirs Neumeister, K. L., Adams, C. M., Pierce, R. L., Cassady, J. C., & Dixon, F. A. (2007). Fourth-grade teachers' perceptions of giftedness: Implications for identifying and serving diverse gifted students. *Journal for the Education of the Gifted*, 30(4), 479-499. <https://doi.org/10.4219/jeg-2007-503>
- Spreacker, A. (2001). Educating for moral development. *Gifted Education International*, 15(2), 188-193. <https://doi.org/10.1177/026142940101500209>
- Stephens, K. R., & Karnes, F. A. (2000). State definitions for the gifted and talented revisited. *Exceptional Children*, 66(2), 219-238. <https://doi.org/10.1177/001440290006600206>
- Sternberg, R. J. (2010). Assessment of gifted students for identification purposes: New techniques for a new millennium. *Learning and Individual Differences*, 20(4), 327-336. <https://doi.org/10.1016/j.lindif.2009.08.003>
- Sternberg, R. J. (1988). *The nature of creativity: Contemporary psychological perspectives*. Cambridge University Press.
- Sternberg, R. J., Grigorenko, E. L., Jarvin, L., Clinkenbeard, P., Ferrari, M., & Torfi, B. (2000). The effectiveness of triarchic teaching and assessment. *National Research Center on the Gifted and Talented Newsletter*, 3-8. <https://nrcgt.uconn.edu/newsletters/spring002/>
- Stuckart, D. W., & Glanz, J. (2010). *Revisiting Dewey: Best practices for educating the whole child today*. Rowan & Littlefield Education.

- Sullivan, G. M., & Feinn, R. (2012). Using effect size--or why the *P* value is not enough. *Journal of Graduate Medical Education*, 4(3), 279-282. <https://doi.org/10.4300/JGME-D-12-00156.1>
- Sword, L. (2001). *Psycho-social needs: Understanding the emotional, intellectual and social uniqueness of growing up gifted* [Paper]. Gifted and Creative Services. <https://www.davidsongifted.org/search-database/entry/r14325>
- Szymanski, T., & Shaff, T. (2013). Teacher perspectives regarding gifted diverse students. *Gifted Children*, 6(1), 1-27. <https://docs.lib.purdue.edu/giftedchildren/vol6/iss1/1/>
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273-1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Terman, L. M. (1926). *Genetic studies of genius. Vol. 1, Mental and physical traits of a thousand gifted children*. Stanford University Press.
- Tillier, W. (1999). *A brief overview of Dabrowski's theory of positive disintegration and its relevance for the gifted*. <https://www.positivedisintegration.com/gifted.pdf>
- Tirri, K. (2010). Combining excellence and ethics: Implications for moral education for the gifted. *Roeper Review*, 33(1), 59-64. <https://doi.org/10.1080/02783193.2011.530207>
- Tirri, K., & Pehkonen, L. (2002). The moral reasoning and scientific argumentation of gifted adolescents. *Journal of Advanced Academics*, 13(3), 120-129. <https://doi.org/10.4219/jsge-2002-374>
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Association for Supervision and Curriculum Development.

- Troxclair, D. A. (2013). Preservice teacher attitudes toward giftedness. *Roeper Review*, 35(1), 58-64. <https://doi.org/10.1080/02783193.2013.740603>
- Unsworth, N., Fukuda, K., Awh, E., & Vogel, E. K. (2014). Working memory and fluid intelligence: Capacity, attention control, and secondary memory retrieval. *Cognitive Psychology*, 71, 1-26. <https://doi.org/10.1016/j.cogpsych.2014.01.003>
- Vaivre-Douret, L. (2011). Developmental and cognitive characteristics of “high-level potentialities” (highly gifted) children. *International Journal of Pediatrics*. <https://doi.org/10.1155/2011/420297>
- VanTassel-Baska, J., & Hubbard, G. F. (2016). Classroom-based strategies for advanced learners in rural settings. *Journal of Advanced Academics*, 27(4), 285–310. <https://doi.org/10.1177/1932202X16657645>
- Watts, G. (2006). Teacher attitudes to the acceleration of the gifted: A case study from New Zealand. *Gifted and Talented*, 10(1), 11-19.
- Wells, R., Lohman, D., & Marron, M. (2009). What factors are associated with grade acceleration?: An analysis and comparison of two U.S. databases. *Journal of Advanced Academics*, 20(2), 248-273. <https://doi.org/10.1177/1932202X0902000203>
- Whole Gifted Child Task Force. (2018). *The Whole Gifted Child Task Force report to the board of directors*. <https://www.nagc.org/sites/default/files/key%20reports/4.1%20WGC%20Task%20Force%20Report.pdf>
- Williams, C. (2007). Research methods. *Journal of Business & Economics Research*, 5(3). <https://doi.org/10.19030/jber.v5i3.2532>

APPENDIX A

SECTION I: DEMOGRAPHIC QUESTIONS

SECTION I: DEMOGRAPHIC QUESTIONS

The Saudi Ministry of Education defines gifted and talented students as those who have unusual capabilities and skills or exhibit distinguished performance in comparison to their peers in one or more areas that society appreciates, especially in the areas of mental excellence, creative thinking, educational attainment, and special skills and abilities, who require special educational services that do not correspond to those offered in the ordinary school curriculum.

What is your gender?	(Male) (Female)
In what city do you currently teach?	(a) Qassim. (b) Riyadh. (c) Hail. (d) Medina. (e) Other (please specify) _____
Where did you receive your college or university degree?	_____
How long have you been teaching?	(1-5 yrs.) (6-10 yrs.) (11-15 yrs.) (16 or more yrs.)
Please make your answer based on having at least one gifted student in your classroom for the time period you choose. Do you have experience teaching/working with gifted students in your classroom?	(Yes) (No) If yes, how long: (a) 1-5 yrs. (b) 6-10 yrs. (c) 11-15 yrs. (d) 16 or more yrs If yes, please explain what type of experience you have had with gifted students: _____

Do you have a gifted child and/or family member?	(Yes) (No) If yes, please specify _____
<p>Have you had any training in gifted education?</p> <p>If yes, please select all categories that apply.</p>	<p>(Yes) (No)</p> <p>(a) I took a course in college for my degree in education.</p> <p>(b) I attended professional development offered by my school district in gifted education.</p> <p>(c) I have attended professional development offered outside of my school district.</p> <p>(d) Other. Please explain: _____</p>
Do you consider yourself gifted?	<p>(Yes) (No)</p> <p>If you answered yes, please briefly explain why you consider yourself to be gifted.</p>

APPENDIX B

SECTION II: TEACHERS' ATTITUDES TOWARD GIFTED CHILDREN AND GIFTED EDUCATION

SECTION II: TEACHERS' ATTITUDES TOWARD GIFTED CHILDREN AND GIFTED EDUCATION

(5-Point Likert Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree)

1	Our schools should offer special educational services for the gifted.	1	2	3	4	5
2	The best way to meet the needs of the gifted is to put them in special classes.	1	2	3	4	5
3	Special programs for gifted children have the drawback of creating elitism.	1	2	3	4	5
4	Children with difficulties have the greatest need for special educational services.	1	2	3	4	5
5	Special educational services for the gifted are a mark of privilege.	1	2	3	4	5
6	When the gifted are put in special classes, the other children feel devalued.	1	2	3	4	5
7	Most gifted children who skip a grade have difficulties in their social adjustment to being with a group of older students.	1	2	3	4	5
8	It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.	1	2	3	4	5
9	Gifted children are often bored in school.	1	2	3	4	5
10	Children who skip a grade are usually pressured to do so by their parents.	1	2	3	4	5
11	The gifted waste their time in regular classes.	1	2	3	4	5
12	We have a greater moral responsibility to give special help to children with disabilities than to gifted children.	1	2	3	4	5
13	Gifted persons are a valuable resource for our society.	1	2	3	4	5
14	The specific educational needs of the gifted are too often ignored in our schools.	1	2	3	4	5
15	The gifted need special attention in order to fully develop their talents.	1	2	3	4	5

16	I would very much like to be considered a gifted person.	1	2	3	4	5
17	Our schools are already adequate to meet the needs of the gifted.	1	2	3	4	5
18	It is parents who have the major responsibility for helping gifted children develop their talents.					
19	A child who has been identified as gifted has more difficulty in making friends.	1	2	3	4	5
20	Gifted children should be left in regular classes, since they serve as intellectual stimulants for the other children.	1	2	3	4	5
21	By separating students into gifted and other groups, we increase the labeling of children as strong, weak, good, less good, etc.	1	2	3	4	5
22	Some teachers feel their authority threatened by gifted children.	1	2	3	4	5
23	The gifted are already favored in our schools.	1	2	3	4	5
24	In order to progress, a society must develop the talents of gifted individuals to the greatest degree possible.	1	2	3	4	5
25	By offering special educational services to the gifted, we prepare the future members of a dominant class.	1	2	3	4	5
26	The government should not have to pay for special education for the minority of children who are gifted.	1	2	3	4	5
27	Average children are the major resources in our society so they should be the focus of our attention.	1	2	3	4	5
28	Gifted children might become vain or egotistical if they are given special attention.	1	2	3	4	5
29	When skipping a grade, gifted students miss exposure to important subjects (they have "holes" in their knowledge).	1	2	3	4	5
30	Since we invest supplementary funds for children with disabilities, we should do the same for the gifted.	1	2	3	4	5
31	Often, gifted children are rejected because people are envious of them.	1	2	3	4	5
32	The regular school program stifles the intellectual curiosity of gifted children.	1	2	3	4	5

33	The leaders of tomorrow's society will come mostly from the gifted of today.	1	2	3	4	5
34	A greater number of gifted children should be allowed to skip a grade.	1	2	3	4	5

APPENDIX C**SECTION III: OPEN-ENDED ITEMS ON THE SOCIAL
AND EMOTIONAL CHARACTERISTICS
OF GIFTED STUDENTS**

SECTION III: OPEN-ENDED ITEMS ON THE SOCIAL
AND EMOTIONAL CHARACTERISTICS
OF GIFTED STUDENTS

Based on your current knowledge:

1. Please describe, in your opinion, what is the typical gifted student.
 2. Please describe any social and emotional traits that you feel are unique to gifted students.
 3. Please describe any positive or negative unique social and emotional needs that you believe gifted student possess.
 4. “It is the teacher’s and school’s responsibility to meet the social and emotional needs of gifted students.” Do you agree with this statement? (Yes/No) Please explain why or why not.
-

استبيان لمعرفة اتجاهات معلمي المرحلة الابتدائية نحو الطلاب الموهوبين وبرامجهم التعليمية

لإعطائك نظره عامه فقط عن الطلاب الموهوبين بناء على تعريف وزاره التعليم في السعودية يعرف الطلاب الموهوبين بأنهم الطلاب الذين يوجد لديهم استعدادات وقدرات غير عادية أو أداء متميز عن بقية أقرانهم في مجال أو أكثر من المجالات التي يقدرها المجتمع وبخاصة في مجالات التفوق العقلي والتفكير الابتكاري والتحصيل العلمي والمهارات والقدرات الخاصة ويحتاجون إلى رعاية تعليمية خاصة لا تتوافق لهم بشكل متكامل في برامج الدراسة العادية

الجنس:

- ☐ معلم.
- ☐ معلمة.
- المنطقة التعليمية التي تعمل بها؟
- ☐ الرياض.
- ☐ المدينة المنورة.
- ☐ القصيم.
- ☐ حائل.

ماهي الجامعة التي تلقيت بها تعليمك الجامعي؟

كم المدة التي تعمل بها معلما؟

- ☐ ما بين ١ إلى ٥ سنوات.
- ☐ ما بين ٦ إلى ١٠ سنوات.
- ☐ ما بين ١١ إلى ١٥ سنة.
- ☐ من ١٦ سنة فأكثر.

هل سبق لك بأن درست أو عملت مع طالبا تم تصنيفه من قبل إداره الموهوبين بأنه طالب موهوب في مدرستك؟

- ☐ نعم.
- ☐ لا.

إذا كانت إجابتك نعم، أرجو توضيح ماذا كانت طبيعة عملك معهم؟

هل أحد أبنائك أو أحد أفراد عائلتك موهوبا؟

- ☐ نعم.
- ☐ لا.

إذا كانت إجابتك نعم، أرجو توضيح ماهي طبيعة موهبته؟

هل سبق وأن تلقيت أي تدريب في تعليم الموهوبين؟

- ☐ نعم.
- ☐ لا.

إذا كانت الإجابة بنعم أرجو الاختيار من القائمة التالية، كما يمكنك اختيار أكثر من إجابة:

- ☐ عن طريق دراسة مادة في الجامعة.
- ☐ من خلال حضور دورة أو ورشه تدريبية مقدمه عن طريق إدارة التربية والتعليم
- ☐ من خلال حضور دورة أو تعليم ذاتي خارج نطاق إدارة التربية والتعليم. على سبيل المثال:

○ عن طريق مصادر أخرى. على سبيل المثال:

هل ترى بأنك شخصاً موهوباً؟

○ نعم.
○ لا.

إذا كانت إجابتك بنعم، أرجو توضيح سبب اعتقاد ذلك من وجهة نظرك الشخصية؟

المحور الأول: استبيان حول اتجاهات المعلمين نحو الطلاب الموهوبين وبرامجهم التعليمية:

عزيزي المعلم العبارات التقريرية التالية تعبر عن اتجاهات المعلمين نحو الطلاب الموهوبين وعن البرامج التعليمية المقدمة لهم. أرجو منك بعد قراءتك للعبارات التالية اختيار الخيار المناسب لك من وجهة نظرك الشخصية، علماً بأنه لا توجد إجابة صحيحة أو خاطئة.



العبارة	لا أوافق بشدة	لا أوافق	غير متأكد	أوافق	أوافق بشدة
١- يجب على مدرستنا تقديم خدمات خاصة تعليمية للطلاب الموهوب.					
٢- أفضل طريقة لتقديم خدمات للطلاب الموهوبين هي عن طريق وضعهم في فصول خاصة بهم.					
٣- الطلاب الذين لديهم مشاكل تعليمية هم أكثر الطلاب حاجة لتلقي الخدمات التعليمية الخاصة.					
٤- إحدى سلبية البرامج المخصصة للطلاب الموهوبين هي نشر مفهوم النخبة (التميز) بين الطلاب.					
٥- الخدمات الخاصة المقدمة للطلاب الموهوبين تعتبر ميزة تكميلية لهؤلاء الطلاب.					
٦- عندما يتم وضع الطلاب الموهوبين في فصول خاصة، يشعر الطلاب الآخرون بقيمتهم المنخفضة.					
٧- معظم الطلاب الموهوبين الذين يتم تسريعهم ونقلهم للفصول الأعلى يواجهون صعوبات في التكيف الاجتماعي مع الطلاب الأكبر سناً منهم.					
٨- من الأفضل للطلاب الموهوبين أن يهدروا وقتهم في الفصل الدراسي الحالي بدلاً من تسريعهم ونقلهم لمرحلة أعلى، والتي تتطلب منهم مواجهه مشاكل التكيف.					
٩- يعاني في كثير من الأحيان الطلاب الموهوبين من الملل في المدرسة.					
١٠- عادة ما يتعرض الطلاب الموهوبين للضغط من قبل أسرهم لكي يتم تسريعهم.					
١١- الطلاب الموهوبين يهدرون وقتهم في الفصول العادية.					
١٢- لدينا واجب أخلاقي لتقديم الخدمات التعليمية الخاصة للطلاب الذين يواجهون مشاكل تعليمية أكثر من تقديمها للطلاب الموهوبين.					
١٣- الأشخاص الموهوبين هم مصادر قيمة لمجتمعنا.					
١٤- غالباً ما يتم تجاهل الاحتياجات التعليمية للطلاب الموهوبين في مدارسنا.					
١٥- الطلاب الموهوبين بحاجة إلى اهتمام خاص من أجل تطوير مواهبهم بشكل كامل.					
١٦- مدارسنا في الوقت الحالي بالفعل قادرة على تلبية احتياجات الطلاب الموهوبين.					
١٧- أتمنى جداً أن أعتبر شخصاً موهوباً.					
١٨- تقع المسؤولية العظمى في تنمية الموهوب على عاتق الوالدين.					
١٩- الطالب الذي يصنف على أنه موهوب، يعاني صعوبة في تكوين الصداقات.					
٢٠- ينبغي إبقاء الطلاب الموهوبين في الصفوف العادية لأنهم بمثابة المحفز الفكري للطلاب الآخرين.					
٢١- تصنيف الطلاب على أنهم موهوبين وغير موهوبين، يساعد في تعزيز مفاهيم مثل قوي وضعيف، جيد ومقبول.					
٢٢- بعض المعلمين يشعرون بأن سلطاتهم التعليمية أو قيادتهم تنقلص بوجود الطلاب الموهوبين في فصولهم.					
٢٣- يمتاز الطلاب الموهوبين بحظوة أو أفضلية خاصة في مدارسنا.					
٢٤- من أجل تقدم المجتمع، لا بد من دعم قدرات الطلاب الموهوبين لأعلى المستويات.					

					٢٥- من خلال تقديم الخدمات التعليمية الخاصة للطلاب الموهبين، نحن نعد أفراد يمثلون الطبقة المسيطرة في المستقبل.
					٢٦- لا ينبغي على وزارة التعليم أو الدولة دفع مبالغ مالية لدعم خدمات الطلاب الموهبين لأنهم يمثلون الأقلية من مجموع الطلاب.
					٢٧- الأطفال متوسطي القدرات العقلية أو العاديين يمثلون الغالبية العظمى في مصادر مجتمعنا لذلك ينبغي أن يتركز عليهم اهتمامنا.
					٢٨- الاهتمام الخاص بالطلاب الموهبين قد يؤدي إلى شعورهم بالغرور أو الإعجاب بأنفسهم.
					٢٩- عندما يتم تسريع الطلاب الموهبين لمرحلة دراسية أعلى من عمرهم الزمني، يفقدون الفرصة لتحصيل المعلومات المهمة مقارنة بأقرانهم في العمر.
					٣٠- عندما نقدم دعم خاص للطلاب ذوي الاحتياجات الخاصة، فيجب أن نقوم بتقديم نفس الدعم أيضا للطلاب الموهبين.
					٣١- غالبا ما يكون الطلاب الموهبين مرفوضون من قبل الناس بسبب الحسد أو الغيرة.
					٣٢- البرامج التعليمية المقدمة في مدارسنا، تعيق الفضول والرغبة العقلية للتعلم والاستكشاف لدى الطلاب الموهبين.
					٣٣- قادة المجتمع في الغد سوف يكونون من الطلاب الموهبين في الوقت الحالي.
					٣٤- ينبغي السماح لأكثر عدد من الطلاب الموهبين تخطي مراحلهم العمرية الدراسية لمرحلة دراسة أعلى.

المحور الثاني: اتجاهات المعلمين نحو الاحتياجات الاجتماعية والعاطفية للطلاب الموهبين.

عزيزي المعلم أرجو منك الإجابة على الأسئلة التالية من وجهة نظرك الشخصية وبناء على الخبرة والمعلومات المتوفرة لديك.

السؤال الأول: أرجو منك تعريف أو وصف الطالب الموهوب من وجهة نظرك الشخصية؟

السؤال الثاني: أرجو منك وصف أو ذكر أي صفات اجتماعية وعاطفية سواء كانت إيجابية أو سلبية تشعر بأنها خاصة لدى الطلاب الموهبين؟

السؤال الثالث: أرجو منك وصف أو ذكر أي احتياجات اجتماعية وعاطفية تعتقد بأن الطلاب الموهبين بحاجة إليها؟

السؤال الرابع هل تؤيد المقولة التالية: المعلم والمدرسة مسؤولون مسؤولية كاملة لتلبية الاحتياجات الاجتماعية والعاطفية لدى الطلاب الموهبين. أرجو توضيح وجهه نظركم في حالة التأييد أو الرفض؟

APPENDIX D
INSITUTIONAL REVIEW BOARD APPROVAL



Date: 12/16/2020
 Principal Investigator: Yaser Alharbi
 Committee Action: **IRB EXEMPT DETERMINATION – New Protocol**
 Action Date: 12/16/2020
 Protocol Number: [2011017122](#)
 Protocol Title: The Attitudes and Knowledge of Giftedness and Gifted Education of General Education Elementary School Teachers in Saudi Arabia
 Expiration Date:

The University of Northern Colorado Institutional Review Board has reviewed your protocol and determined your project to be exempt under 45 CFR 46.104(d)(702) for research involving

Category 2 (2018): EDUCATIONAL TESTS, SURVEYS, INTERVIEWS, OR OBSERVATIONS OF PUBLIC BEHAVIOR. Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; (ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by 45 CFR 46.111(a)(7).

You may begin conducting your research as outlined in your protocol. Your study does not require further review from the IRB, unless changes need to be made to your approved protocol.

As the Principal Investigator (PI), you are still responsible for contacting the UNC IRB office if and when:



- You wish to deviate from the described protocol and would like to formally submit a modification request. Prior IRB approval must be obtained before any changes can be implemented (except to eliminate an immediate hazard to research participants).
- You make changes to the research personnel working on this study (add or drop research staff on this protocol).
- At the end of the study or before you leave The University of Northern Colorado and are no longer a student or employee, to request your protocol be closed. *You cannot continue to reference UNC on any documents (including the informed consent form) or conduct the study under the auspices of UNC if you are no longer a student/employee of this university.
- You have received or have been made aware of any complaints, problems, or adverse events that are related or possibly related to participation in the research.

If you have any questions, please contact the Research Compliance Manager, Nicole Morse, at 970-351-1910 or via e-mail at nicole.morse@unco.edu. Additional information concerning the requirements for the protection of human subjects may be found at the Office of Human Research Protection website - <http://hhs.gov/ohrp/> and <https://www.unco.edu/research/research-integrity-and-compliance/institutional-review-board/>.

Sincerely,

A handwritten signature in black ink that reads "Nicole Morse".

Nicole Morse
Research Compliance Manager

University of Northern Colorado: FWA00000784

APPENDIX E**LETTER FROM RESEARCHER TO THE SAUDI
MINISTRY OF EDUCATION REQUESTING
OFFICIAL PERMISSION TO CONDUCT
THE RESEARCH (ARABIC)**



سعادة مدير عام مركز بحوث سيغرات للتعليم وازرة للتعليم فقه لها

لها لم يهيكلم ور حم لها ويركف ه، وبعد:

فليدس علتكلم بئني يلد ر خالد الاحبي، طالب مبتعث شلد رلة اللففورافسي جام عشم اللففورادو (University of Northern Colorado) همت خصص للتربية اللففصة وتربية الامو ميديتحت برراف اللففورادو جيفر هيتشوت واللففورادو لي مي جيف. أعمل حلفي مرفق لللففطيق اللفلفي ولفك عن طويق جمع للبيانات والامفوم اتبدرلتي حول " آراء ومفومات مفمي الامدار سالفطيق فنحو اللفلف الامو ميدين وايضا جمه مالفايية اللففم اعي واللفففة لك مدف هذه اللفرلن لللففعرف واللفشف عن آراء ولفج ا هات مفمي للتفهم اللفامنحو اللفلف الامو ميدين ولفرامج لللفففي اللففص قب مم. ستزودفلفج هذه اللفرلن قب اذ الفلفف على اللفافيون ولفففي رعلي اللفلف الامو ميديفسي لاملفكة اللفففي اللففوي ففم م وتوندي ح موفف اللفففي رتجاه اللفلف الامو ميدين ومدى موفف مبابفيا راجات مؤول اللفلف باللففم اعي واللفففة.

لذا أمل منس علتكلم لللففم بلفم ا حلفي بلفطيق درلتي ولفك عن طويق لللففصل مع للفففيين ولامفومات وتوني عاليففيل، وتسيل م همة جمع للبيانات لامطوب الففم اللففح لللففمي شلفر الففم انفم المضم ولففف عاؤلفم.

لفففي من للففم ففمات عن للفرلن، أرجو لللففصل معي عن طويق احدى طرق لللففصل افاه.

فدم اللففب/ي لدر خالد الاحبي

طالب للففورافسي جام عشم اللففورادو

فسم للربية اللففصة

اللفف: () / ()
لففي داللففوني: alha3

APPENDIX F**LETTER FROM RESEARCHER TO THE SAUDI
MINISTRY OF EDUCATION REQUESTING
OFFICIAL PERMISSION TO CONDUCT
THE RESEARCH (ENGLISH)**



Dear [Head of Education Policy and Research Center],

My name is Yaser Alharbi and I am a doctoral student at the University of Northern Colorado. I am currently working on my dissertation research in which I hope to conduct a study to investigate and describe Saudi teachers' attitudes and knowledge regarding giftedness and gifted education. The title of my project is "The Attitudes and Knowledge of Giftedness and Gifted Education of General Education Elementary School Teachers in Saudi Arabia."

The results of this research will provide school districts in Saudi Arabia with an understanding of the attitudes and knowledge Saudi teachers currently hold regarding giftedness and gifted education. It may also be used to guide future research to obtain insight into how to expand and improve Saudi general education teachers' understanding and attitudes regarding the affective needs of gifted students, since no study has investigated this area of need in the gifted in Saudi Arabia.

Therefore, I am writing to kindly ask your permission and assistance to conduct my study in Saudi schools by communicating with general education coordinators at certain school districts and distributing a survey to the general education teachers in those districts.

For any questions or concerns regarding my research or about the study's procedures, please do not hesitate to contact me by any of the contact methods below.

Thank you for your consideration,

Yaser Alharbi,

Phone: (xxx) xxx-xxxx

Email: xxxxxxxxxx@xxxxxx.com

APPENDIX G

**APPROVAL TO CONDUCT RESEARCH FROM THE
SAUDI MINISTRY OF EDUCATION**

الرقم : ٥١٢٩٧
التاريخ : ١٢ / ٥ / ١٤٤٢ هـ
المشروعات :



المملكة العربية السعودية
وزارة التعليم
وكالة التخطيط والتطوير
مركز بحوث سياسات التعليم

الموضوع: بشأن تسهيل مهمة الباحث / ياسر بن خالد الحربي

سعادة عام التعليم بمنطقة الرياض
السلام عليكم ورحمة الله وبركاته
تجدون سعادتكم أدناه باركود ورابط استبانة لطالب الدكتوراه بجامعة
(شمال كولورادو) / ياسر بن خالد الحربي، بعنوان "آراء ومعلومات معلمي المدارس الابتدائية
نحو الطلاب الموهوبين واحتياجاتهم الأكاديمية والاجتماعية والعاطفية".
آمل من سعادتكم التكرم بالتوجيه باستيفائها من معلمي ومعلمات المرحلة
الابتدائية - بداية الفصل الدراسي الثاني - على الباركود أو الرابط التالي:



<https://cutt.us/IUWzN>

وللاستفسار يمكن التواصل مع الباحث على بريده التالي: [Redacted]
وتقبلوا تحياتي وتقديري

مدير عام مركز بحوث سياسات التعليم

أ. د. عبدالرحمن بن عبدالكريم مرزا

APPENDIX H**LETTER TO THE GENERAL EDUCATION
COORDINATORS OF THE RIYADH,
QASSIM, MEDINA, AND HAIL
SCHOOL DISTRICTS**



Dear [General Education Coordinator],

My name is Yaser Alharbi and I am a doctoral student at the University of Northern Colorado. I am currently working on conducting a study to investigate and describe Saudi teachers' attitudes and knowledge regarding giftedness and gifted education. The results of this research will provide the school districts in Saudi Arabia an understanding of the attitudes and knowledge Saudi teachers currently hold regarding giftedness and gifted education. It may also be used to guide future research on looking for insight into how to expand and improve Saudi general education teachers' understanding and attitudes regarding the affective needs of gifted students, since no study has investigated this area of need in the gifted in Saudi Arabia.

Participation in the study will only involve completing a Qualtrics Survey, which will be accessed via an online link. By participating in the survey, teachers will have the opportunity to share their attitudes and knowledge regarding giftedness and gifted education. The estimated time to complete the survey is around 12 minutes. Participation is voluntary, and teachers may decide not to participate in the study. Moreover, even if a teacher begins the survey, they may decide to stop at any time and exit the questionnaire. Teachers will not be asked any personal questions that would reveal their identities. Data collected and analyzed for this study will be kept secret and no one will have access to it except the researcher and the researcher's advisors. The only one who will have access to the actual Qualtrics site of the survey will be the researcher; the researcher's advisors will only have access to the data after the researcher has downloaded it. The cost to the teachers for participating in this study is the time it takes to complete the survey.

In order to complete the study, I would like to request your help and guidance in recruiting participants to my study. If possible, I ask that you provide me a list of the contact information of the elementary school teachers in your district in order for me to directly distribute the survey to them. If privacy laws constrain you from sharing such contact information with me, I would ask that you personally distribute the recruitment letter via email, which I will provide, to the elementary school teachers in your district. Please contact me with any questions at my personal phone number (xxx) xxx-xxxx.

Thank you for your time and support. I look forward to hearing back from you.

APPENDIX I**RECRUITMENT LETTER TO TEACHERS (ARABIC)**



دعوة للمشاركة في بحث عن الطلاب الموهوبين

عزيزي/ المعلم/ هـ

السلام عليكم ورحمة الله وبركاته وبعد،

أدعوك للمشاركة في دراسة تهدف إلى التعرف على آراء واتجاهات المعلمين نحو الطلاب الموهوبين وحاجاتهم الأكاديمية والاجتماعية والعاطفية. هذه الدراسة جزء من عملي لإنهاء متطلب التخرج لمرحلة الدكتوراه في جامعه شمال كولورادو. ستزود نتائج هذه الدراسة بإذن الله تعالى الباحثين والمهتمين برعاية الطلاب الموهوبين في إدارات التعليم والأكاديميين في المملكة العربية السعودية بفهم وتوضيح مواقف المعلمين تجاه الطلاب الموهوبين ومدى معرفتهم باحتياجات هؤلاء الطلاب الاجتماعية والعاطفية. كما أنه يمكن استخدام نتائج هذا البحث لتوجيه ودعم البحوث المستقبلية حول كيفية تحسين مواقف وآراء المعلمين تجاه هؤلاء الطلاب وخصوصا احتياجاتهم الاجتماعية والعاطفية لعدم وجود دراسة تم إجراؤها على معلمي التربية العامة في هذا المجال تحديدا لأنك معلم في مدرسة ابتدائية، فأنت مؤهل للمشاركة في هذه الدراسة. إذا كنت مهتماً بالمشاركة في هذه الدراسة، فالرجاء الضغط على الرابط التالي

https://unco.co1.qualtrics.com/jfe/form/SV_d4Qv4b4F36HLOTz

أو عن طريق تمرير كمره الجوال على الصورة التالية:



إذا كنت ترغب في معرفة المزيد عن هذه الدراسة قبل اتخاذ قرارك بالمشاركة، فيرجى عدم التردد في الاتصال معي عن طريق رقم الجوال الخاص بي () أو عبر البريد الإلكتروني (). مشاركتك في هذه الدراسة هي قرارك بالكامل والمشاركة تطوعية. علما بأن عدم مشاركتك في هذه الدراسة لن تؤثر على علاقتك بمشرفك في إدارة التعليم العام. شكرا لك على وقتك. وتقبل خالص تحياتي، ياسر الحربي

APPENDIX J**RECRUITMENT LETTER TO TEACHERS (ENGLISH)**



Dear [Teacher],

I am writing to invite you to participate in a study on Saudi teachers' attitudes and knowledge of giftedness and gifted education at Saudi schools, which I am conducting to fulfill the requirements of a doctoral degree at the University of Northern Colorado. In addition to examining attitudes and knowledge, this study will investigate Saudi teachers' knowledge of the social and emotional needs of gifted students. The results of this research will provide the school districts in Saudi Arabia an understanding of the attitudes and knowledge Saudi teachers currently hold regarding giftedness and gifted education. It may also be used to guide future research on looking for insight into how to expand and improve Saudi general education teachers' understanding and attitudes regarding the affective needs of gifted students, since no study has investigated this area of need in the gifted in Saudi Arabia.

If you are interested in participating in this study, please click the link [https://unco.co1.qualtrics.com/jfe/form/SV_d4Qv4b4F36HLOTz]. Or scan the QR code with your phone camera.



If you would like to learn more about this study before making your decision to participate, please do not hesitate to contact me by phone (xxx) xxx-xxxx) or by email (xxxxxxxxxx@xxxxxx.com). Your participation in this study is entirely your decision and participation is voluntary; moreover, whether or not you participate in this study will not affect your relationship with your general education coordinator.

Thank you for your time and consideration.

Best Regards,

Yaser Alharbi