The Attitudes of Secondary School Teachers Regarding Inclusion of Students with Autism in Saudi Arabia

Mohammed Al Jaffal

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THE ATTITUDES OF SECONDARY SCHOOL TEACHERS REGARDING THE INCLUSION OF STUDENTS WITH AUTISM IN SAUDI ARABIA

A Dissertation
Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for the degree of Doctor of Philosophy

By
Mohammed A. Al Jaffal

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Mohammed Al Jaffal

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Special Education Doctoral Program

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THE ATTITUDES OF SECONDARY SCHOOL TEACHERS REGARDING
INCLUSION OF STUDENTS WITH AUTISM IN SAUDI ARABIA

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ABSTRACT

THE ATTITUDES OF SECONDARY SCHOOL TEACHERS REGARDING
INCLUSION OF STUDENTS WITH AUTISM IN SAUDI ARABIA

By
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May 2019

Dissertation supervised by Temple S. Lovelace, Ph.D., BCBA-D.

The purpose of this study was to examine secondary school teachers’ attitudes regarding inclusion of students with autism spectrum disorders (ASD) in Riyadh, Saudi Arabia. In Saudi Arabia, students with ASD can attend regular education classrooms especially in elementary and middle schools. In addition, the Ministry of Education in Saudi Arabia is interested in the inclusion of students with ASD in secondary schools. Since the attitudes of secondary school teachers toward inclusion of students with ASD have not been examined, it was important to look at the attitudes of these teachers towards the inclusion of students with ASD so that it is implemented successfully. Over 2000 secondary school teachers completed an online survey. Data were collected using a convenience sample and analyzed using SPSS. The results of the study indicated that secondary school teachers in Riyadh had positive attitudes toward inclusion of students
with ASD. Furthermore, most teachers participating in this study indicated that the placement of students with ASD should be determined based on the severity of ASD symptoms. In addition, secondary school teachers’ attitudes differed based on the following variables: years of teaching experience, gender, level of education, and type of school. This study suggested that secondary school teachers should be provided with effective training and professional development so that they can include students with ASD. The use of the convenience sample and the online survey could limit the generalizability of the results. Future research should examine teachers pre-service and their knowledge about ASD.

*Keywords*: students, autism, inclusion, teacher attitude, secondary school teachers, Saudi Arabia
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Chapter I

INTRODUCTION

The Centers for Disease Control and Prevention (CDC) reported that one in 59 children is diagnosed with ASD (2018). ASD is defined by the Individuals with Disabilities Education Act (IDEA) as a developmental disability that generally starting before the age of three. It affects the child’s social interaction and both verbal and nonverbal communication. ASD also impacts the student’s educational performance and is characterized by resistance to change in daily routines and environment, non-typical responses to all kinds of sensory experiences, and engagement in activities of repetitive nature (34 C.F.R. 300.8(c)(1)). Therefore, those who are involved in a student with ASD’s education, including teachers, related service professionals, administrators, parents, and others, can struggle with diagnosing and addressing the aforementioned characteristics (Simpson, Boer-Ott, & Smith, 2003). This struggle becomes a daunting task, especially when trying to include students with ASD in general education settings, given the absence of clear guidelines (Simpson et al., 2003). This can affect a teacher’s attitude toward the inclusion of student with ASD in the general education classrooms (Chung et al., 2015).

A teacher’s attitude is a critical factor that affects the quality of education students receive (Bender, Vial, & Scott, 1995; Segall & Campbell, 2012). Positive teacher attitudes toward the inclusion of individuals with ASD into mainstream classes is imperative in creating a positive learning environment (Horrocks, White, & Roberts, 2008; McGregor & Campbell, 2001; Morton & Campbell 2008; Park & Chitiyo, 2009). The government of Saudi Arabia has focused on increasing effective supports for individuals with ASD, therefore the Saudi Arabian Ministry of Education intends to increase the inclusion of students with ASD in public schools (Alzaidi, 2017; Ministry of Education, 2017). Before the implementation of broader inclusion in
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Saudi Arabia, it is important to examine the teachers’ attitudes toward inclusion, so that the desired results of inclusion can be achieved (Abed & Alrawajf, 2017).

Aljarallah, Alwaznah, Alnasari, and Alhazmi (2006) indicated that there was no data on the prevalence of ASD in Saudi Arabia; however, it was suggested that the total number of individuals with ASD in Saudi Arabia is over 167,000. Al-Zahrani (2013) collected data including 22,950 children aged 7–12 years in primary schools within the Taif District; Al-Zahrani reported that 35 out of every 1,000 children were diagnosed with ASD. In addition, a recent report found that there are approximately 53,000 individuals diagnosed with ASD in Saudi Arabia, meaning that about one in 400 individuals is identified as having ASD in Saudi Arabia (General Authority for Statistics, 2018). However, the Saudi Ministry of Education (2015) reported that roughly 1,400 students with ASD were served in schools. Most of these students were attending elementary and middle schools (Ministry of Education, 2017). If diagnostic procedures improve and awareness increases, there would be a greater number of students with ASD in public schools. King and Bearman (2009) reported one in four children diagnosed with ASD would not have been diagnosed with ASD in 1993. In comparison, the number of school-age individuals with ASD is about 1 in 59 in the U.S (Blumberg et al., 2013). Therefore, schools in Saudi Arabia can expect an increase in the diagnosis of children with ASD and the increasing number of students with ASD in elementary schools will lead to the increase the number of students with ASD enrolling in middle and secondary schools.

Statement of the Problem

Currently in Saudi Arabia, most students with ASD are included in elementary and middle schools (Ministry of Education, 2017). In Riyadh, the capital of Saudi Arabia, there are only two programs that students with ASD can attend to pursue secondary schools. These
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programs are only for students with ASD, and they are divided into three levels: elementary, middle, and high school levels (Ministry of Education, 2017). The Ministry of Education in Saudi Arabia has a plan to include students with ASD in secondary schools (A. Aalsaqabi, personal communication, October 10, 2017; Ministry of Education, 2017). Students with ASD will eventually be included in secondary schools for the following reasons. First, Saudi Arabia has signed the UNESCO Salamanca Statement, which supports Education for All and states that “every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning [and] those with special educational needs must have access to regular schools” (UNESCO, 1994, p. viii-ix). Second, the Saudi Ministry of Education issued the Document of Rules and Regulations for Special Education Programs and Institutes (RSEPI) in 2002. Chapter 3, Article 18 of RSEPI refers to regular schools as the natural educational environments for students with special needs (Al-Mousa, 2010). The RSEPI, which was written based on the U.S. special education policies, ensures rights to individuals with disabilities (Alquraini, 2012). The categories of disabilities that are covered by the RSEPI include cognitive disability, learning disabilities, ASD, multiple disability, deafness, blindness, gifted, physical and health disability, emotional disorder, and communication (Alquraini, 2013). Third, the Ministry of Education in Saudi Arabia has opened secondary schools for individuals with specific learning disabilities, hearing impairments, visual impairments, physical disabilities, and intellectual disabilities (Al-Mousa, 2010). In the near future, students with ASD in Saudi Arabia will be integrated in the secondary schools (A. Aalsaqabi, personal communication, October 10, 2017; Ministry of Education, 2017).

Consequently, it is critical to examine and investigate the attitudes of secondary school teachers towards inclusion of students with ASD in Saudi Arabia. In order for inclusion for
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students with ASD to be successful, it is critical for teachers to hold positive attitudes toward these students (Finke, McNaughton, & Drager, 2009; Horrocks et al., 2008; McGregor & Campbell, 2001; Morton & Campbell 2008; Segall & Campbell, 2012). The success of including students with ASD in public schools depends on teacher attitude (Avramidis et al., 2000). Hence, the inclusion of students with ASD may not be implemented successfully until the negative attitudes of teachers are changed (Karp, 2011).

Teachers’ Attitudes

Attitude is defined as “a person’s enduring favorable or unfavorable cognitive evaluations, emotional feelings, and action tendencies toward some object or data” (Boone & Kurtz, 2002, pp. 281-2). Although many scholars have examined teacher attitude toward the inclusion of students with ASD, they only focused on elementary school teachers (Alfaiz, 2006; Alhudaithi, 2015; Alzaidi, 2017; Haimour & Obaidat, 2013). For example, Alquraini (2012) examined elementary school teachers’ perspective towards the inclusion of students with severe intellectual disabilities in Riyadh and found that elementary teachers tended to have slightly negative attitudes towards inclusion of students with severe intellectual disabilities. Furthermore, Haimour and Obaidat (2013) surveyed elementary school teachers in Jeddah, Saudi Arabia, in order to assess their knowledge about ASD and found that elementary school teachers had an inadequate level of knowledge about ASD. McCray and MChatton (2011) found that teachers had negative attitudes toward the inclusion of students with disabilities. McCray and MChatton (2011) also revealed that teachers felt unprepared to teach students with disabilities, and they needed specific knowledge and skills in order to change their attitudes towards inclusion. Therefore, teachers’ knowledge and experience can affect their attitude towards inclusive education.
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Although several recent studies (e.g., Alfaiz 2006; Alhudaithi 2015; Alzaidi 2017) found that teachers held positive attitudes toward the inclusion of student with ASD, these studies only examined the attitudes of special education teachers or teachers with previous interactions with students with disabilities at significant levels. These studies also focused only on elementary school teachers, who mostly held special education degrees or general education teachers who had interacted and worked with students with ASD. According to a report from the European Agency for Development in Special Needs Education (2003), inclusive education works well in elementary schools; however, it is an issue at secondary schools where teachers are not willing to include students with disabilities. For example, it is reported that elementary school teachers were more supportive of inclusion than secondary school teachers, and general education teachers had negative attitudes towards inclusion of students with ASD in secondary schools (Chung, Susan, Smith & Palmer, 2015; Leyser & Tappendorf, 2001; Van Reusen, Shoho, & Barker, 2001). Alhudaithi (2015) explored the attitude of Saudi Arabia’s female teachers in elementary schools and special institutions towards the inclusion of students with ASD into mainstream classes. The main findings of this study revealed that the teachers had positive attitudes and were considerably supportive of the inclusion of students with ASD within their classrooms. However, teachers working in private special institutions were more positive than mainstream school teachers. To date, no study has examined secondary school teachers’ attitudes toward the inclusion of students with ASD in Saudi schools (Alhudaithi, 2015). Therefore, Alquraini (2011) argued that “more research is needed to examine the attitudes of teachers and other stakeholders regarding inclusive education and the factors that affect these attitudes” (p.154).
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Significance of the Study

The Saudi special education law indicates that general education schools are the natural educational environment for individuals with disabilities (Al-Mousa, 2010). Therefore, the Ministry of Education in Saudi Arabia intends to integrate students with ASD in public schools (Alzaidi, 2017). To date, no study has examined secondary school teachers’ attitudes towards the inclusion of students with ASD in Saudi secondary schools. This research is important as there is no published research on the attitude secondary school teachers regarding the inclusion of students with ASD in Saudi Arabia. In comparison to the elementary and middle schools, including students with disabilities in Saudi secondary schools is moving slowly (Alkhashrami, 2003). This research can hasten the movement of inclusion for individuals with ASD in secondary schools and post-secondary schools.

Multiple research teams (Ashburner, Zivaini, & Rodger, 2010; Chung et al., 2015; Emam & Farrell, 2009) indicated that teachers perceive students with ASD as having low levels of academic achievements and emotional and social development. Consequently, teachers cannot support students with ASD academically or socially. Teachers may also unconsciously treat students with ASD unequally (Ashburner, Zivaini, & Rodger 2010; Chung et al. 2015; Emam & Farrell, 2009). As the number of students with ASD has increased in public schools and the inclusion of students with ASD is the trend in Saudi Arabia (Aldabas, 2015; Alzaidi, 2017), it is important to ensure that attitudes of secondary school teachers towards inclusion of students with ASD are positive. Teacher attitude is a critical concept related to inclusion since it impacts how teachers treat students (Gal, Schreur, & Engel-Yeger, 2010). This study may provide policymakers in Saudi Arabia with the needed recommendations to promote the inclusion of students with ASD in secondary schools.
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This study explores secondary school teachers’ attitudes towards the inclusion of students with ASD because secondary school teachers will interact with students with ASD. When students with ASD are included in general education classrooms, general education teachers are often responsible for the needed instructional modifications and adaptations that ensure the academic and behavioral success of students with ASD, especially at the secondary level (Moores-Abdool, 2010). Since teacher attitude is a valuable variable, which affects the way teachers teach their students, it is important to examine the attitudes of secondary school teachers to ensure that students with ASD will receive an appropriate education (Lohrmann & Bamburra, 2006).

Al-Zyoudi (2006) found that a teacher’s attitude could be influenced by many factors, such as the nature and severity of the disability, teaching experience, school, gender, and grade level. Having knowledge and experience working with students with ASD can promote more affirmative attitudes toward teaching students with ASD in the mainstream classroom (Helmy, 2017). While variables like years of teaching experience and training affect teachers’ attitude positively, no single variable has been found to be a strong predictor of teachers’ attitudes up to this point (Avramidis & Norwich, 2002). Hence, these factors were examined in this study.

The Purpose of the Study

Since there is not a single study, which has examined the attitudes of secondary school teachers on the inclusion of students with ASD in public schools in Saudi Arabia, this study investigated the attitudes of secondary school teachers towards the inclusion of students with ASD in public schools. First, this study provided insight into the attitudes of secondary school teachers towards including students with ASD in the general education classrooms. Second, this study examined variables, which impact the attitudes of secondary school teachers toward inclusion of
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students with ASD in Riyadh. Third, this study analyzed the opinions of secondary school teachers regarding the appropriate placement options for students with ASD. This study also identifies the factors which influence the attitudes of secondary school teachers towards inclusion of students with ASD. This study addresses the following questions and hypotheses:

Q1: What are the attitudes of secondary school teachers toward inclusion of students with ASD in the general education classrooms?

Q2: What placement options do secondary school teachers think are appropriate for educating students with ASD?

Q3: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their years of teaching experience? (0 to 5 years – 6 to 10 years- 11 and above)

Null Hypothesis: There are no significant differences among secondary school teachers’ attitudes with 0-5, 6-10, and above 11 years of teaching experience towards inclusion students with ASD.

Alternative Hypothesis: There are significant differences among secondary school teachers’ attitudes with 0-5, 6-10, and above 11 years of teaching experience towards inclusion students with ASD.

Q4: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their gender? (Male-Female)

Null Hypothesis: There are no significant differences between male and female secondary school teachers’ attitudes towards inclusion of students with ASD.

Alternative Hypothesis: There are significant differences between male and female secondary school teachers’ attitudes towards inclusion of students with ASD.
**Q5:** Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon types of schools, where they teach? (Private- Public)

Null Hypothesis: There are no significant differences between public school teachers and private school teachers’ attitudes towards inclusion of students with ASD.

Alternative Hypothesis: There are significant differences between public school teachers and private school teachers’ attitudes towards inclusion of students with ASD.

**Q6:** Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their level of education? (Undergraduate- Graduate)

Null Hypothesis: There are no significant differences between teachers with undergraduate degrees and teachers with graduate degrees on attitudes regarding inclusion of students with ASD.

Alternative Hypothesis: There are significant differences between teachers with undergraduate degrees and teachers with graduate degrees on attitudes regarding inclusion of students with ASD.

**Study Design**

This study utilized a quantitative design to examine secondary school teachers’ attitudes toward including students with ASD in their classrooms. Quantitative research is a method of examination utilized for constructive studies to test theories or hypotheses, collect descriptive data, and examine relationships or differences among variables (Shank Brown, & Pringle, 2014). The researcher used a quantitative approach because this approach seeks to confirm or reject hypotheses about a phenomenon (Vogt, 2006). In addition, this approach seeks to understand the social phenomena by examining a group of individuals rather than experimental setting, which focus on the views of an individual (Meadows, 2003). More specifically, the researcher used a
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survey research design. The survey research design is to gather information about large numbers of individuals regarding a specific topic, in this case the inclusion of students with ASD in Saudi secondary schools.

Definitions of Terms

**Full Inclusion.** Students with disabilities in this type of inclusion spend most of the school day in general education classroom and spend the rest of the time receiving special education services provided by special education teachers in resource rooms (Almousa, 2010).

**Partial Inclusion.** Students with disabilities in partial inclusion attend regular schools in self-contained classes; however, they can also participate in and attend physical education, art, and other non-curricula activities with students without disabilities (Almousa, 2010).

**Autism: Autism Spectrum Disorder (ASD).** ASD, which is categorized by IDEA as a developmental disability, generally starts before the age of three. It negatively affects the child’s social interaction and both verbal and nonverbal communication. Moreover, ASD negatively impacts students’ educational performance and is characterized by resistance to any change in the daily routines and environment, non-typical responses to all kinds of sensory experiences, and engagement in activities of repetitive nature (34 C.F.R. 300.8(c)(1)).

**Attitudes.** Boone and Kurtz (2002) defined attitude as, “A person’s enduring favorable or unfavorable cognitive evaluations, emotional feelings, and action tendencies toward some object or data” (p. 281-2)

**Secondary Schools.** In Saudi Arabia, secondary school is the equivalent of sophomore, junior and senior years of high school.
Chapter II

LITERATURE REVIEW

The Historical Definition of ASD

The history of autism spectrum disorders (ASD) can be traced back to 1908 when Eugen Bleuler, a psychiatrist, first applied the term “autism” to describe a patient with schizophrenia (Bleuler, 1911). Kita and Hosokawa (2011) explained that Bleuler in 1911 used the term “autism” to refer to the mental state of human beings. Further, researchers began regarding people with dementia or who were socially isolated as autistic. Kita and Hosokawa (2011) added that these people preferred to “minimize contacts with the external world and withdraw into one’s own world” (p. 148). Asperger (1944) and Kanner (1943) were the first researchers working in the area of ASD. Kanner (1943) studied 11 children and identified various characteristics of ASD. These features include difficulty with social interactions, struggling with adapting to any changes to routine, tendency to repeat words, and extreme sensitivity to stimuli, especially light, while having good intellect and memory.

Since then, the definition and prevalence of ASD have changed (Wolff, 2004). In the beginning, Kanner (1943) defined autism narrowly and was dismayed by the widening of the definition to include children with isolated autistic symptoms on the basis of brain damage and mental retardation; therefore, in the 1950s, “the country was populated by a multitude of autistic children” (Mccallister, 2010, p.23). In the 1950s and 1960s, the prevalence of schizophrenia increased, especially in the United States (Dvir & Frazier, 2011). Dvir and Frazier (2011) stated, “The distinction between the two disorders remained unclear for nearly 30 years, until DSM-II [Diagnostic and Statistical Manual of Mental Disorders, 2nd edition] included children with autism under the diagnostic umbrella of schizophrenia, childhood type” (p. 1). ASD varies in
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regards to character and severity, and it affects all ethnic, socioeconomic groups, and every age

The Current Definition of ASD

ASD has increasingly become a concern because of its impact on children’s academic
and social skills (Rutter, 2005). Scholars use the term ASD to describe and define autism
spectrum disorders as a complex developmental and neurological disorder that appears during
early childhood and carries on into adulthood (Courchesne et al., 2007; Koolschijn & Geurts,
2016). Rutter (2005) defined the characteristics of ASD as difficulties in social interaction,
communication, and repetitive behaviors. The term “spectrum” is used because individuals with
ASD can have various symptoms (Rutter, 2005). The American Psychiatric Association (2013)
included all ASD in a single category, which is ASD. ASD used to have subcategories including
pervasive development disorder, Asperger Syndrome, autistic disorder, and childhood
disintegrative disorder.

The definition of ASD has drastically changed since it was introduced in 1952
(Newschaffer et al., 2007). In 1980, the term “autistic” was used within the DSM only as a trait
for describing schizophrenia; however, it does not imply that ASD diagnostic criterion was non-
existent (Newschaffer et al., 2007). For instance, ASD became present when Kanner defined the
diagnostic criteria. In 1980, the emergence of the DSM-III led to the introduction of “infantile
autism” which created multiple autism diagnoses for the first time including multiple diagnostic
assessments and excluding the causes of mental disorders (Rutter, 2005). The DSM-III in 1987
was revised to DSM-III-R, which placed ASD under Pervasive Developmental Disorders
(Rutter, 2005).
DSM-IIIR acted as the first expansion for ASD diagnostic criteria (Rutter, 2005). In 1994, DSM–IV added disorders and further revised diagnostic criteria for ASD (American Psychiatric Association [APA], 2013). Experts subdivided the criteria into behavior, communication, and social interaction, as well as covered 16 traits (Johnson & Myers, 2007). Johnson and Myers (2007) indicated eight of these traits must be observed before administrating diagnosis. The changes significantly increased the prevalence of ASD. Physicians had used these criteria until reviewers introduced DSM-V in 2013 (Dare et al., 2017). Tsai and Ghaziuddin (2014) contend that DSM-V merged ASD and other conditions into one diagnosis: ASD. The three diagnostic traits were merged into social communication and interaction (American Psychiatric Association [APA], 2013). Scholars initially criticized these changes, believing it would negatively affect diagnoses and lead to fewer children receiving necessary services (Tsai & Ghaziuddin, 2014).

The DSM–5 (2013) defined ASD as a form of developmental disorder described in terms of difficulty in social communication and exhibition of a repetitive pattern of mild to severe behaviors (American Psychiatric Association [APA], 2013). Similarly, the Individuals with Disabilities Education Act (IDEA, 2004) defines ASD as a form of developmental impairment that has a detrimental impact on verbal and non-verbal forms of communication as well as social interaction. In Saudi Arabia, ASD is defined as a disorder that affects children’s learning and becomes apparent before age of three. In addition, it is characterized by difficulty in communication and social interaction along with engagement in repetitive activities (Ministry of Education of Saudi Arabia, 2002).
Characteristics of ASD

Autism Speaks (2011) suggested that an ASD diagnosis needs at least six behavioral characteristics. Individuals with ASD lack social-emotional reciprocity and nonverbal communicative behaviors and display inability to develop, maintain, and understand relationships. In addition, they also exhibit at least two forms of repetitive behavioral patterns (Christensen et al., 2016). Some of the patterns are repetitive movements, non-adherence to routines, and fixated interests (Dare et al., 2017). Repetitive behaviors include finger flicking, utilization of objects like spinning coins, using speech like echolalia, excess adherence to sameness and routines, ritualized behavioral patterns, and highly restricted interests that could be abnormal in focus (Visser, Rommelse, Greven, & Buitelaar, 2016). In DSM-5, sensory differences are categorized under the umbrella of restricted repetitive behaviors, some of which are visual, auditory, tactile, taste, proprioceptive, and vestibular input sensitivities.

Individuals with ASD show signs of social communication impairments. During the first few years, these signs include inappropriate eye contact and inability to initiate joint attention (Dare et al., 2017). These signs are usually demonstrated through inappropriate play skills. Boutot (2016) and Dare et al., (2017) argued that some children may be uninterested in engaging in co-curricular activities with their peers, and they may also refuse to respond to other children’s social approaches. In addition, individuals with ASD struggle with using and interpreting body language, such as facial cues and expressions (Speaks, 2016). Similarly, they may not understand the perspective of their counterparts and staying on topic.

Individuals with ASD also show language impairment, particularly receptive and expressive language (Speaks, 2016). Receptive language refers to language comprehension, such as following directions, whereas expressive language is the capacity to express one’s desire and
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perspectives to others (Dare et al., 2017). Some individuals with ASD can express their thoughts verbally; however, many need the help of communication devices (Boutot, 2016). The nonverbal individuals may have speech delays or utilize sign language and alternative augmentative communication (Dare et al., 2017). In addition, ASD characteristics tend to vary among individuals based on various stages of life and environment (Boutot, 2016).

Students with ASD are unique individuals due to their characteristics, which may cause issues in general education settings (Moores-Abdool, 2010). When these students are included in general education classrooms, general education teachers are responsible for modifications and adaptations needed for these students to be successful in their classrooms. The level of intervention required to support students with ASD in general education classrooms can range from mild to severe (Moores-Abdool, 2010). It is documented that there is a “real need within the professional community to understand ASD and the many complexities presented by the various dimensions of the disorder” (Leblanc, Richardson, & Burns, 2009, p. 167). Attitudes of education professionals towards the inclusion of children with ASD into mainstream classes are critical about creating a classroom where appropriate interventions can be implemented (Horrocks et al., 2008; McGregor & Campbell, 2001; Morton & Campbell 2008; Park & Chitiyo, 2009; Segall & Campbell, 2012).

Prevalence of ASD

The prevalence rate of ASD has increased globally (Neik et al., 2014). The CDC (2018) indicated that one in every 59 children is diagnosed with ASD, and males have higher likelihood to be diagnosed with ASD than females. More specifically, males were four times more likely than females. The prevalence of ASD has increased because of the higher sense of public
awareness of the disorder and changes and improvement in diagnostic methods criteria and procedures (Elsabbagh et al., 2012).

In Saudi Arabia, there were no official statistics about the number of individuals with ASD, but it is suggested that the total number of individuals with ASD is over 167,000 (Aljarallah et al., 2006; Alnemary, Aldhalaan, Simon-Cereijido, & Alnemary, 2017). Al-Zahrani (2013) reported 35 of every children ages1000 7-12 in Taif city, Saudi Arabia had ASD; however, it is difficult to ascertain a generalized prevalence of ASD due to the unavailability of documented information (Alnemary et al., 2017; Kozub & Lienert, 2003). In addition, a recent report found that there are approximately 53000 individuals diagnosed with ASD in Saudi Arabia, meaning that, about one in 400 individuals is identified as having ASD in Saudi Arabia (General Authority for Statistics, 2018). It is difficult to ascertain a generalized prevalence of ASD in Saudi Arabia. Sometimes, this was due to due to the unavailability of documented information about ASD (Alnemary et al., 2017). It also might be due to the low awareness among Saudi people about the disability (Al-Mousa, 2010; Al-Zahrani, 2013).

The History and Movement of Inclusion in the U.S.

The history of inclusion started in the USA in 1954 with the Brown vs. Board of Education case in which it was argued that every student, notwithstanding race or any other characteristics, should have equal access to public schools, which made public education more accessible for students with disabilities (Obiakor, Harris, Muta, Rotatori, & Algozzine, 2012). In 1972, the arguments of this case were used in the case of Pennsylvania Association for Retarded Citizens (PARC) vs. Commonwealth of Pennsylvania, which further guaranteed individuals with disabilities the right to free and appropriate public education (Yell, 2012).
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An important federal law, Education for All Handicapped Children Act (EHA) known also as Public Law 94-142, was passed by the U.S. Congress in 1975. It mandated high quality education for every student with disabilities and ensured individualized and special education services for all students. This federal law guaranteed all individuals’ right to education and ensured accountability of both local and state educational agencies to provide every exceptional child with educational services (Yell, 2012). The main objective of EHA was to improve special education services in the U.S.; however, this process had a lot of underlying obstacles and issues with inclusion (Murphy, 1996).

Notwithstanding great improvements in the educational services provided to children with disabilities as a result of adopting EHA, the process of receiving services was still very complicated. In 1990, EHA was reauthorized and renamed IDEA. This act added ASD and traumatic brain injury as two new disability categories, and also added a transition requirement for students who are age 16 or older. Finally, this law mentioned services such as assistive technology and rehabilitation services (Yell, 2012). In 1997, IDEA (P.L. 105-17) added new Individualized Education Program (IEP) requirements and changed the IEP team. It reorganized the structure of IDEA by adding new disciplinary provisions to allow school officials greater autonomy in disciplining students with disabilities. Additionally, this amendment required states to collect statistics such as graduation and dropout rates along with performance goals (Yell, 2012).

Even though the law has reauthorized several times, the biggest change was the 2004 reauthorization of IDEA, the Individuals with Disabilities Education Improvement Act (IDEIA) (Moores-Abdool, 2010). IDEIA aimed to ensure that all children with disabilities get a free and appropriate education in the least restrictive environment (LRE) and receive related services to
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prepare them for the future (Trohanis, 2008; Yell, 2012). Also, this act ensured that both parents and educators had access to the required tools to improve education for students with disabilities, along with procedural safeguards to retain benefits (Keogh, 2007; Trohanis 2008; Yell, 2012).

The most important piece of this reauthorization was to provide an education that meets the unique needs of and prepares the child for further education, independent living, and/or employment (Moores-Abdool, 2010).

**Legal requirements of IDEA.** IDEA recognizes and defines thirteen types of disabilities: Specific learning disability (SLD), Other health impairment, Emotional disturbance, Visual impairment, including blindness, Deafness, Hearing impairment, Deaf-blindness, Orthopedic impairment, Intellectual disability, Traumatic brain injury, Multiple disabilities, and ASD, which was added as a separate category of disability in 1990 under P.L. 101-476. The purpose of IDEA was to ensure that all children with disabilities are receiving a free and appropriate education (FAPE) in their least restrictive environment (LRE) and access to related services to prepare them for the future as well as evaluating the performance of students with disabilities (Trohanis, 2008; Yell, 2012). Additionally, IDEA 2004 aimed to ensure that parents and educators have all the required tools to improve education for students with disabilities (Keogh, 2007). IDEIA 2004 also aimed to ensure the rights of children with disabilities and their parents to receive such services by establishing procedural safeguards (Trohanis 2008; Yell, 2012). IDEIA has defined “highly qualified” teachers. It also has made great progress, so students with disabilities from all states can access high quality education curricula as well as special instruction to achieve the best outcomes possible in their education (Schiller & O’Reilly, 2007; Yell, 2012). Although IDEA 2004 does not mandate inclusion, it does state that a child should be educated in their “least restrictive environment” (LRE) (Yell, 2012). Students with
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disabilities should be educated to the maximum extent appropriate with peers without disabilities. IDEA 2004 has not been the only law that is a driving force for change in the education of students with disabilities (Yell, 2012).

Additional legislation. Both the No Child Left behind Act (NCLB, 2001) and the Every Student Succeeds Act (ESSA) aimed at improving the education system for students with disabilities. Both supported that all students, including students with disabilities should receive a good quality of education. NCLB (2001) required every student to be assessed in core subjects: writing, reading, science, and math (Karger, 2005; Karger & Hitchcock, 2003). NCLB was reauthorized as the Every Student Succeeds Act (ESSA), which was signed by President Obama on December 10, 2015. ESSA grants significantly more power to states while continuing to require reporting from schools about the capabilities of their students (Darrow, 2016). ESSA holds all students to high academic standards to prepare them for success in the future. Also, ESSA ensures accountability so that steps can be taken to help students who fall behind. ESSA also ensures that parents and teachers have access to annual student performance assessments. Finally, ESSA supports students from low-income families, students of color, and students with disabilities to get a proper education (Department of Education, 2015).

The History and Movement of Inclusion in Saudi Arabia

The history of education for students with disabilities in Saudi Arabia started for all students to receive education together; however, as education developed, separate institutions were established to educate students with special needs (Al-Mousa, 2010). There were no specific special education services for individuals with disabilities before 1958. AL-Noor Institute, in Riyadh, was the first special education institution founded in 1960, but only served individuals with visual impairments (Aldabas, 2015). Afterwards, other institutes were
established to educate individuals with hearing impairments and intellectual disabilities (Aldabas, 2015; Al-Mousa, 2010).

In Saudi Arabia, special education services improved significantly between 1987 and 2000. This improvement increased the enrollment of individuals with disabilities in public schools (Aldabas, 2015). Legislation of Disability (LD) was enacted in 1987 and it is the first law adopted in Saudi Arabia to support all individuals with disabilities. The LD defined all types of disabilities and outlined assessment and diagnosis procedures along with prevention and intervention programs. Moreover, LD obligates public agencies to provide training programs and rehabilitation services for individuals with special needs to live independently (Alquraini, 2011; Ministry of Health Care, 2010).

The LD reintroduced inclusion to general education schools, however, the number of segregated institutes increased (Al-Mousa, 1999). These segregated institutes are only designed for students with disabilities (Alquraini, 2011). Since then, the public schools have implemented the inclusion concept throughout Saudi Arabia (Al-Mousa, 1999). The inclusion implementation process was started by the Ministry of Education in 1990 in a limited number of schools. However, six years after the Ministry introduced a new educational strategy based on ten key aims, and the progress of inclusion became much faster. One of the aims was to have public schools ready to integrate children with disabilities with their typically developing peers (Al-Mousa, Al-Saratawi, Al-Abduljabbar, Al-Batal, & Al-Husain, 2008).

The Provision Code for Persons with Disabilities in Saudi Arabia was enacted in 2000. The rights of individuals with disabilities have become guaranteed in every aspect, including the right to free public education (Aldabas, 2015; Al-Mousa, 2010). Furthermore, the Document of Rules and Regulations for Special Education Programs and Institutes (RSEPI) in 2002 indicated
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in Chapter 3, Article 18, the regular schools are the natural educational environment for individuals with disabilities (Al-Mousa, 2010; Alquraini, 2011). Moreover, Saudi Arabia has signed the Convention on the Rights of Persons with Disabilities and its Protocol in 2009. The countries that signed this Convention are required to provide inclusive education at all levels (Al-Mousa, 2010). Inclusion is a concept that emanated from the principle that education is an inherent human right. Its recognition as an inherent human right began in 1948 under the United Nations Universal Declaration of Human Rights (Altamimimi et al., 2015; Weber 2012). As already stated, the educational placement options of students with disabilities in Saudi Arabia had changed since 1990. Consequently, students with mild to moderate intellectual disabilities, mild to moderate ASD disorders, hearing impairments, and visual impairments have the ability to be educated in public schools (Aldabas, 2015; Al-Mousa, 2010; Alquraini, 2011).

Placement Options for Students with ASD in Saudi Arabia

**Full inclusion.** In full inclusion, students with disabilities participate in the general education classrooms for at least half of the time, and spend the other half of the time receiving special education services in the resource rooms with special education teachers (Almousa, 2010). The target group of this type of inclusion is students with communication disorders, mild physical disabilities, learning disabilities, behavioral disorders, ASD, and emotional disorders (Alquraini, 2011). For full inclusion, students are expected to complete the general education curriculum with only minor modifications (Almousa, 2010; Alquraini, 2011). They attend regular classrooms and obtain special education services provided by special educators as needed (Almousa, 2010; Alquraini, 2011). The provision of special services is based on the severity of disability, the nature of the special needs, students’ educational needs, and their grades (Almousa, 2010).
Partial inclusion. Partial inclusion is designed for students with moderate disabilities (Almousa, 2010). These students attend general education schools in self-contained classes according to individualized curricula; however, they take part in physical education, art, and other extra-curricular activities with the students without disabilities (Almousa, 2010; Alquraini, 2011). These students may also be included in limited general education classes with curriculum modifications.

Special institutions. Most students with severe or profound intellectual disabilities, multiple impairments, or ASD are educated in special institutions where they do not interact with their typically developing peers in inclusion settings (Alquraini, 2011). Students with severe or profound intellectual in the special institutions are taught by special education teachers and their using special curriculum that is designed for each type of disability. In this placement option, usually “there is no opportunity for these children to attend further education after middle school except some vocational training centers that are also limited” (Alquraini, 2013 p.607).

Teachers’ Role in Inclusive Education

General educators in inclusive settings teach both students with and without disabilities. General education teachers, therefore, should understand the academic and social needs of individuals with disabilities (Sabornie & deBettencourt, 1997). When students with ASD are placed in general education classrooms, general education teachers are responsible for modifying and accommodating their materials to ensure students’ success (Moores-Abdool, 2010). The needs of students with ASD are so variable which can present numerous obstacles when including students with ASD in general education classrooms (Moores-Abdool, 2010; Wolff, 2004). In order for students with ASD to access general education classrooms, curriculum modifications and instructional accommodations should be provided for them depending on their
level of functionality. The required support for students with ASD in general education classrooms can range from slight to intensive (Moores-Abdool, 2010). Accommodations and modifications are critical to successfully include students with ASD in the general education classroom (Alquraini & Gut, 2012). Thus, general education teachers need high-quality pre-service and in service preparation, so that the attitudes of teachers toward the inclusion of students with ASD are positive (Chung et al., 2015; Park & Chitiyo, 2010).

**Pre-Service Training**

Working with students with ASD in inclusive settings can be challenging for teachers; this issue can further be complicated if combined with inadequate knowledge about ASD and lack of support (De Boer & Simpson, 2009). Teachers have to design and implement inclusive programs for students with ASD. Several scholars (e.g., Hinton et al., 2008; Horrocks et al., 2008; Symes & Humphrey, 2010) have found that general education teachers feel inadequately prepared to support students with ASD socially or academically.

Harvey, Yssel, Bauserman, and Merbler (2010) examined a sample of national preservice teacher education programs, specifically how these programs, whether special or general education, prepare teachers to teach in inclusive settings. Surveys were emailed to preservice teachers in these programs. The results indicated that (1) several strategies are beneficial for inclusive education: team teaching, cross-articulation, co-taught courses, and teacher-developed resources, and (2) certain departments had no specific courses for the preservice teachers that enable them to teach in inclusive settings.

Research indicated that teacher preparation programs are the most significant element that influences teachers’ motivation and attitude for teaching children with ASD (Busby et al., 2012; Lambe & Bones, 2006). Increase in communication with children with ASD and effective
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Training aimed at learning evidence-based practices are the most effective elements of successful inclusive education for students with ASD (Barned et al., 2011; Busby et al., 2012). Active mentoring while teaching in inclusive settings is also a factor for successful teaching of students with disabilities (Barnet et al., 2011). Preservice teachers need to be able to discuss their teaching experiences with mentors, especially about the inclusion of students with special needs so that teacher attitude could be better understood (Barnet et al., 2011). Most interventions for students with ASD are successfully implemented if the preservice program includes active mentoring and opportunities to practice teaching (Conderman & Johnson-Rodriguez, 2009; Jung, 2007). Teachers preservice programs paper to be a critical factor that influence teachers attitudes toward inclusion of students with ASD.

Professional Development

Professional development can impact teachers’ attitudes toward the inclusion of students with ASD. Hornby, Gable, and Evans (2013) argued that ineffective professional development hinders the success of inclusive education. The traditional method of professional development involves lectures and handouts, which can be ineffective (Bethune & Wood, 2013). Odom (2009) indicated that professional development has often been a one-time workshop or presentation with no ongoing support, which does not promote effective implementation of strategies. Odom (2009) and Simonsen, Myers, and DeLuca (2010) stressed the need for follow-up training, such as feedback, manuals, and online support, to increase the likelihood of implementing instructional strategies. Professional development can enhance teachers’ implementation of instructional strategies, and “enlightened approaches to professional development offer great promise for leading effective practices from the proverbial laboratory to the classroom, home, and community” (Odom, 2009, p. 59). Multiple research teams (e.g., Kedzior & Fifield, 2004;
Odom, 2009, Odom, Cox, & Brock, 2013) asserted that effective professional development should have multiple stages. This requires identifying the content, planning for and commitment to an infrastructure of support at both the state and local levels, direct training for service providers, and ongoing coaching, technical assistance and support for teachers and other service providers in their use of EBPs to support students with ASD (Odom et al., 2013). Avramidis and Elias (2007) documented that developing effective professional development for teachers can help them to have positive attitudes towards inclusion of students with disabilities.

Effective professional development has been described as an ongoing part of classroom instruction that is integrated, logical, and useful and incorporates experiences consistent with teachers’ goals aligned with standards, assessments, other reform initiatives, and teaches EBPs (Kedzior & Fifield, 2004). Training teachers to work with ASD can be effective only if certain aspects are taken into consideration, such as providing these teachers with evidence-based interventions for students with ASD (Chung et al., 2015). Richardson and Burns (2009) found that teachers felt confident to teach students with ASD after they received trainings and learning about the fundamental applied behavior analysis (ABA) techniques. Interacting with students with ASD can also benefit teachers and enhance their practical knowledge about students with ASD (Park & Chitiyo, 2010). Students with ASD are unique, and their behaviors can be repetitive, aggressive, or self-injurious; therefore, receiving special training inform and teach teachers how to behave when students exhibit such behaviors (Chung et al., 2015). When teachers have the needed skills to treat students with ASD in the general education classroom, teachers will have positive attitudes and then student will receive an appropriate education.

General education teachers need to be adequately trained to meet the academic and social needs of students with ASD. However, Busby, Ingram, Bowron, Oliver, and Lyons (2012) found that
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general education teachers lacked support for the inclusion and adoption of new instructional methods. Emam and Farrell (2009) examined the perception of teachers and other professional assistants who worked with students with ASD in inclusion settings. The results indicated that students with ASD’s behaviors such as poor social interaction and emotional understanding negatively influenced the teachers and other assistants’ attitudes toward students with ASD. The teachers reported facing challenges when having these students in their classrooms. These difficulties increased because teachers were unable to meet students with ASD’s individual needs while teaching the remaining students, which negatively affected their perception of inclusive education.

Given the increasing number of students with ASD in mainstream classrooms, educators are expected to create an inclusive educational environment (Horrocks, White, & Roberts, 2008; Lindsay et al., 2013). However, some scholars (e.g., Humphrey & Lewis, 2008; Symes & Humphrey, 2010) state that many schools struggle to meet the needs of students with ASD. To create inclusive social environments, educators must positive attitudes and reorganize their class structure, and teaching methods so that they can accommodate students with ASD (Chung et al., 2015; Hinton, Sofronoff, & Sheffield, 2008; McGregor & Campbell, 2001).

Definition of Attitude

There is not a common definition of the term “attitude”. Allport (1935) defined attitude as “A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations, which it is related to” (p. 2). Zimbardo and Ebbensen (1970) defined attitude as mental readiness or an implicit predisposition that places some general as well as consistent influence on a considerable class of responses of evaluation. Biklen and Bogdan (1986) modified this definition and explained
attitude as the tendency to exhibit a specific reaction towards an object, value, or a situation. Zimbardo and Leippe (1991) defined attitude as “an evaluation of someone or something along a continuum of like-to-dislike or favorable-to-unfavorable” (p. 31).

For the purpose of this study, attitude is defined as; “A person’s enduring favorable or unfavorable cognitive evaluations, emotional feelings, and action tendencies toward some object or data” (Boone & Kurtz, 2002, p. 281-282). Attitudes have three important components: cognitive, affective, and behavioral (Shank, 2002). The cognitive components indicate the individual’s beliefs, thoughts, and knowledge about an issue. The affective components are the individual’s emotional responses or feelings about an object. Finally, the behavioral components are the individual’s previous actions or experiences regarding an object (Katz & Stotland, 1959).

Multiple research teams (e.g., Horrocks et al., 2008; McGregor & Campbell, 2001; Morton & Campbell, 2008; Park & Chitiyo, 2009; Segall & Campbell, 2012) have argued that a teacher’s attitude toward including students with ASD are critical because they affect the students’ academic and social skills. Although many believe that placing children in a general education classroom can enhance their skills, this often does not occur (Vakil et al., 2009). Avramidis et al. (2000) found that the teachers’ attitude is the most significant factor in the success of inclusive education. Thus, the success of including students with ASD depends on teachers’ attitudes toward inclusive education.

The Impact of Teachers’ Attitudes on Practice

General education teachers mostly demonstrate their perception of students with ASD as those who have a low level of academic achievements, emotional, and social development and this perception can affect their treatment of these students (Ashburner, Zivaini, & Rodger, 2010; Chung et al., 2015; Emam & Farrell, 2009). Lopes, Monteiro, and Sil (2004) reported that
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teachers felt frustrated and guilty because they spent too much time accommodating and modifying the lessons for students with disabilities. Since teachers had to do extensive planning for their lessons, they developed negative attitudes toward implementing interventions in their classrooms.

Cassady (2011) stated that general education teachers are concerned with the lack of social skills of students with ASD. These students may demonstrate outbursts, which require certain modifications by teachers. Cassady (2011) added that when teachers have negative attitudes toward inclusive education, their skills or knowledge do not empower them to teach effectively. If general education teachers do not accept the ideas of inclusion, they will not treat students with disabilities properly, which ultimately hinders students with disabilities’ success.

McCray and McHatton (2011) found that teacher candidates, even after completing a course focused on teaching students with disabilities, are hesitant to work with students with disabilities. The authors added that these results are disconcerting because teachers are willing to include students with disabilities, but they still view them from a deficit perspective. In other words, these teachers think that students with disabilities will not benefit from being included in general education classrooms. These teacher candidates felt unprepared to teach students with disabilities, and they needed specific knowledge and skills to change their perceptions, beliefs, and attitudes.

In the U.S., previously, the highly qualified teacher mandate required that special educators be certified in both special education and a primary content area, however, there was no such requirement for general educators regardless of the increasing number of students with disabilities included in general education classrooms (McCray & McHatton, 2011). Similarly, currently in Saudi Arabia, general education teachers do not take any courses in special
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education, so they are often unprepared to teach students with disabilities (Aldabas, 2015). Consequently, some teachers may have negative attitudes toward teaching students with disabilities, which affects their teaching performance when teaching these students (Al- Mosa, 2008).

Teachers’ Attitudes Toward Inclusion of Students with ASD

Numerous studies have examined teachers’ attitudes toward the inclusion of students with ASD (Alfaiz, 2006; Avramidis & Norwich, 2002; Cassady, 2011; Chung et al., 2015; Haimour & Obaidat, 2013; Park & Chitiyo, 2011). Although several studies found that teachers hold positive attitudes toward students with ASD (Avramidis & Norwich, 2002; Haimour & Obaidat, 2013; Park & Chitiyo, 2011), Avramidis et al. (2000) indicated, “regular teachers’ attitudes reflected lack of confidence in their own instructional skills and quality of support personnel available to them. They were positive about integrating only those whose disabling characteristics were not likely to require extra instructional or management skills” (p. 279). Vaughn et al. (2007) argued, “teacher's most important role is to establish an academic community and climate that promotes the learning and acceptance of all students...” (p. 130). Avramidis et al. (2000) stated that teachers’ attitudes could be the most significant factor in integrating students with significant disabilities. Teachers reported positive attitudes toward the inclusion of students with disabilities, but negative attitudes toward having students with multiple disabilities in the general education classroom. General education teachers who hold negative attitudes toward inclusive education may exhibit unwillingness to have these students in their classroom, so they may not provide them the academic and social support needed for students to succeed (Cassady, 2011).
Lopes et al. (2004) stated that students with special needs “present serious challenges to teachers because they are difficult, time-consuming, and frustrating” (p. 413). Unlike typically developing children, children with ASD and emotional behavioral disorders exhibit various behaviors in the classroom which require special attention from professionals. Therefore, teachers are concerned and worried about having students with ASD and emotional behavioral disorders in the general education setting due to their lack of social skills, behavioral outbursts, as well as the needed modifications to the curriculum, and lack of training and support (Cassady, 2011).

McGregor and Campbell (2001) surveyed 49 mainstream teachers and 23 specialists about their attitudes toward the inclusion of students with ASD into mainstream schools in Scotland. They found that teachers were concerned about the negative impact on typical students such as less adult attention and class disruption resulting from integrating students with ASD into the mainstream classroom. Thus, only 47% of specialists and 35% of mainstream schoolteachers supported the full inclusion of students with ASD.

Mavropoulou and Padeliadu (2000) surveyed 35 general educators and 29 special educators about their perception toward the inclusion of students with ASD in Greece. Only 55% of general educators and 37% of special education teachers had positive attitudes toward inclusive education. Chung et al. (2015) found that teachers perceived students with ASD as more different from typical students, and so they were more likely to avoid students with ASD. The authors also found that secondary teachers had negative attitudes toward the inclusion of students with ASD in secondary schools. These attitudes are related to inadequate training, as well as a lack of knowledge, and skills. Without addressing this issue, it is impossible to change
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teachers’ negative attitudes toward the inclusion of students with ASD (Chung et al., 2015; McGregor & Campbell, 2001).

Monsen and Frederickson (2003) investigated teachers’ attitude towards inclusion using primary school teachers. The participating teachers were polled on their views of policies and practices of mainstreaming. In addition, students taught by these teachers completed a survey of their perception about their learning environment. The results indicated that students taught by inclusion-positive teachers were more satisfied than those taught by teachers whose attitudes were less positive. Therefore, teachers’ attitudes influenced the students’ satisfaction of learning.

Hammond and Ingalls (2003) examined elementary school teachers’ attitudes towards inclusion in three rural area schools in the U.S. They found the schools are moving toward inclusion; however, their efforts were impacted by challenges during the implementation of inclusion-related programs. Hammond and Ingalls (2003) added that teachers’ attitudes towards inclusion impact the success of inclusive education. Some teachers hold negative attitudes toward teaching students with disabilities, and these negative attitudes affect teachers when teaching these students (Al-Mousa, 2008). The rate of student accommodation within the classroom is anchored on the attitudes that teachers exhibit (Jones, 2009).

Alquraini (2012) investigated teachers’ perspective towards the inclusion of students with severe intellectual disabilities in elementary schools in the city of Riyadh, Saudi Arabia. In addition, the study investigated some variables such as prior inclusive teaching experience, teacher’s gender, students’ level of being taught, teacher having a relative with a disability, teaching position as to whether general or special, and teachers’ level of training. A sample of 303 participants was used and comprised 161 males, 139 females, and 3 individuals whose gender was not specified. Survey research design was used for this study. Alquraini (2012)
indicated that the teachers had slightly negative perspective regarding inclusion of students with severe intellectual disabilities. Alquairaini (2012) also found that teachers’ attitudes towards inclusion of students with severe intellectual disabilities were differed based on teacher’s gender, current teaching position, previous teaching experience with students with disability.

Factors that influence attitudes. In educational settings, certain factors such as years of experience, gender, type of inclusion, teachers’ positions, education level, and types of schools can have a significant influence on teachers’ attitudes toward the inclusion of students with disabilities. Al-Zyoudi (2006) found that teachers’ attitudes might be influenced by several factors such as the severity of the disabilities, teaching experience, level of education and gender.

Teachers’ years of experience. Several studies (Burke & Sutherland, 2004; Dukmak, 2013; Forlin, 1995; Jamieson, 1984) indicated that teachers’ years of experience is an important factor that affects teachers’ attitudes toward the inclusion of students with disabilities. In essence, experience that is gained over time improves the skills, knowledge, and productivity of teachers (Rice, 2010). Al-Ahmadi (2009) examined teachers’ expectations of inclusive education in elementary schools in Riyadh, Saudi Arabia. Al-Ahmadi (2009) found that teachers with more than five years teaching experience were more accepting of inclusive education than teachers with less teaching experience. However, Forlin (1995) showed that the most experienced teachers were less accepting of inclusive education. Showalter-Barnes (2008) stated that there were significant differences among teachers with zero to five, six to fifteen, and more than fifteen years of experience on attitudes towards the inclusion of students with ASD. To elaborate on these findings, post hoc tests showed that the group of teachers with less than five years of teaching experience had considerably higher mean of inclusion than those who had more than six years of experience. This shows that teachers with less experience had positive attitudes toward
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inclusion of students with ASD. In addition, Al-Zyoudi (2006) and Haimour and Obaidat (2013) demonstrated that teachers with fewer years of experience were more supportive of the inclusion of students with ASD than those who had many years of teaching experience. Meanwhile, other researchers (Abed & Alrawajfh, 2017; Avramidis, Bayliss, & Burden, 2000; Park & Chitiyo, 2011) concluded that there was not relationship between the years of teaching experience and teachers’ perspectives toward the inclusion of students with disabilities. Based on these conflicting studies, it is not clear whether experience, as a single variable, can affect teachers’ attitudes of inclusive education.

Gender. Gender has been speculated to have an influence on the attitudes of teachers towards the inclusion of students with disabilities in general classrooms. Nonetheless, Paddeliladu and Lampropoulou (1997) suggested that the role of gender on teachers’ attitudes towards inclusion of students with disabilities has yielded inconsistent outcomes. For instance, Al-Ahmadi (2009) and Alquraini (2012) found that male teachers had more positive attitudes of inclusion than female teachers. However, other studies (Abed & Alrawajfh, 2017; Alghazo & Gaad, 2004; Al-Zyoudi, 2006; Leyster, 1994) found that female teachers had more positive attitudes towards inclusion than male teachers. Overall, these findings showed that female teachers had more positive attitudes toward inclusion than male teachers.

Teachers’ education level. Several studies (Abed & Alrawajfh 2017; Haimour & Obaidat, 2013; Parasurma, 2006) examined teachers’ education level and experience. Teachers with a high level of education commonly have more positive attitudes toward the inclusion of students with ASD. For example, teachers who hold master’s degrees were found to have more positive attitudes toward the inclusion of students with ASD than teachers with bachelor’s degrees (Haimour & Obaidat, 2013; Parasurma, 2006). However, some studies (Abed &
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Alrawajfh 2017; Alfaiz, 2006; Alquraini, 2012; Avramidis, Bayliss & Burden, 2000) indicated that teachers’ high level of education did not affect teachers’ attitudes toward the inclusion of students with disabilities, including students with ASD.

**Type of inclusion.** Some studies (Avramidis & Norwich, 2002; Forlin, 1995; Nickels, 2010) found that teachers preferred partial inclusion to full inclusion for students with disabilities. Nickels (2010) examined elementary and secondary teachers’ attitudes toward educational interventions and inclusion for students with ASD. The results indicated that teachers believed in the benefits of partial inclusion in general education settings for children with ASD. However, some teachers felt that not all students with ASD needed to be accommodated, thus full inclusion can work for students with ASD. Similarly, Heiman (2004) found that teachers preferred partial inclusion to full inclusion.

**Severity of disability.** Several studies (Al-Zyoudi, 2006; Avramidis et al., 2000; Ryan, 2009) showed that the severity of a disability could affect educators’ attitudes towards the inclusion of students with disabilities in public schools. Teachers can view students with disabilities as extremely difficult to teach, time-consuming, and frustrating (Lopes et al., 2004). Students with ASD exhibit emotional behavioral disorders in the classroom, which require personalized attention. Teachers were found to be more willing to teach students with mild disabilities than those with severe disabilities (Alquraini, 2012; Cook, 2001). In addition, teachers had more positive attitudes towards the inclusion of students with physical or cognitive disabilities than those who have severe disabilities (Forlin, 1995). Teachers also reported that the severity of ASD can determine their success while being included in the general education classroom (Humphrey & Symes, 2013).
Summary

Most studies (e.g., Alhudaithi, 2015; Alfaiz, 2006; Alzaidi, 2017; Haimour & Obaidat, 2013) examined teachers’ attitudes toward the inclusion of students with disabilities in Saudi schools focused only on elementary schools’ teachers. Therefore, the attitudes of secondary school teachers toward the inclusion of students with ASD in Saudi Arabia have not been examined. In Saudi Arabia, including students with disabilities in secondary schools is slow compared to the elementary and middle schools (Alkhashrami, 2003). This study was important because it seeks to explore the attitudes of secondary school teachers, who do not usually interact with students with ASD. Since teachers’ attitudes are a valuable variable that affects the way teachers teach their students (Lohrmann & Bamburra, 2006), it was important to examine secondary school teachers’ attitudes to ensure that students with ASD receive appropriate education.
Chapter III

METHODOLOGY

The purpose of this study was to examine secondary school teachers’ attitudes regarding inclusion of students with ASD in the general education classroom in Riyadh. In Saudi Arabia, students with ASD are being placed in regular education classrooms especially in elementary and middle schools (Aldabas, 2015; Mousa, 2010). In addition, the Ministry of Education is interested in the inclusion of students with ASD at the secondary level (A. Aalsaqabi, personal communication, October 10, 2017). In Riyadh, secondary school teachers’ attitudes toward inclusion of students with ASD have not been examined by researchers. Thus, it was important to examine the attitudes these teachers regarding inclusion of students with ASD to enhance the education programs for students with ASD. This chapter described the research method utilized by highlighting the research questions, hypotheses, research design, research variables, participants, instrument, data collection, and analysis procedures.

Research Questions and Hypotheses

Q1: What are the attitudes of secondary school teachers toward inclusion of students with ASD in the general education classrooms?

Q2: What placement options do secondary school teachers think are appropriate for educating students with ASD?

Q3: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their years of teaching experience? (0 to 5 years – 6 to 10 years- 11 and above)
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Null Hypothesis: There are no significant differences among secondary school teachers’ attitudes with 0-5, 6-10, and 11 & more years of teaching experience towards inclusion students with ASD.

Alternative Hypothesis: There are significant differences among secondary school teachers’ attitudes with 0-5, 6-10, and 11& more years of teaching experience towards inclusion students with ASD.

Q4: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their gender? (Male-Female)

Null Hypothesis: There are no significant differences between male and female secondary school teachers’ attitudes towards inclusion of students with ASD.

Alternative Hypothesis: There are significant differences between male and female secondary school teachers’ attitudes towards inclusion of students with ASD.

Q5: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon types of schools, where they teach? (Private- Public)

Null Hypothesis: There are no significant differences between public school teachers and private school teachers’ attitudes towards inclusion of students with ASD.

Alternative Hypothesis: There are significant differences between public school teachers and private school teachers’ attitudes towards inclusion of students with ASD.

Q6: Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their level of education? (Undergraduate- Gradate)

Null Hypothesis: There are no significant differences between teachers with undergraduate degrees and teachers with graduate degrees on attitudes regrading inclusion of students with ASD.
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Alternative Hypothesis: There are significant differences between teachers with undergraduate degrees and teachers with graduate degrees on attitudes regarding inclusion of students with ASD.

Research Design

A quantitative research methodology was used to conduct this research study. Quantitative research is a method of examination utilized for constructive study to test theories or hypotheses, collect descriptive data, and examine relationships or differences among variables (Shank, Brown, & Pringle, 2014). The researcher used a quantitative approach because this approach seeks to confirm or reject hypotheses about a phenomenon (Vogt, 2006). In addition, this approach seeks to understand the social phenomena by examining a group of individuals rather than experimental settings, which focus on the views of an individual (Meadows, 2003). The quantitative approach is appropriate for looking at attitudes (Shank et al., 2014). More specifically, the researcher used a survey research design to gather information about large number of individuals regarding the attitudes of secondary school teachers towards inclusion of students with ASD. The survey research design is appropriate for collecting information and data on individuals’ attitudes and beliefs (Cohen, Manion, & Morrison, 2007).

Operational Definition of Variables

**Dependent Variables.** The dependent variable for this study was secondary school teachers’ attitudes toward inclusion of students with ASD. The dependent variable was measured by teachers’ responses to a 24-item survey. More specifically, the dependent variable was measured by overall mean scorers of teachers’ responses to the items in The Attitudes toward Inclusion of Student with Autism Scale (ATISAS). The mean score is 2.5, which is a hypothetical separation limit between the positive and negative attitudes (Haimour & Obaidat,
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2013). Therefore, the mean below 2.5 was considered as teachers’ negative attitudes toward inclusion of students with ASD while the mean above 2.5 was considered as teachers’ positive attitudes toward inclusion of students with ASD.

**Independent Variables.** The independent variables of this study were teachers’ gender, teachers’ years of teaching experience, type of school, and teachers’ level of education. These variables were measured by teachers’ responses to demographic information section in the survey. For example, the independent variable of question three was teachers’ years of teaching experience (0 to 5 years – 6 to 10 years- 11 and above), and the independent variable of question four was teachers gender (Male – Female).

**Participants and Setting**

The target population of this research study was secondary school teachers in Riyadh. Riyadh has around 15000 secondary school teachers in public and private schools (Ministry of Education, 2018). The participants were drawn from secondary school teachers in Riyadh. Participants had to meet some criteria to participate in this study: They had to be secondary school teachers and teach in public or private schools in Riyadh.

**Sampling and Sample Size.** The researcher chose a convenience sample to find participants. The convenience sample is non-probability sampling method that is made up of teachers who are easy to reach (Shank et al., 2014). The sample size for this study was determined by using the G power software for 5% error, 0.80 % power, and 0.25 effect size (Murphy & Myors, 2003). Cohen (1989) suggested that 5% of error and 0.80 % of power are appropriate for this type of study (Cohen, 1989). The G power software suggested to have a minimum of 159 secondary school teachers for this study. For this study, participants were
voluntary and informed of any advantages and consequences of their participation by a consent form (Appendix F).

**Data Collection Instrument**

The researcher in this study used The Attitudes toward Inclusion of Student with Autism Scale (ATISAS), which was developed by Haimour and Obaidat in 2013. According to Cohen, Manion, and Morrison (2007), “surveys are useful for gathering factual information, data on attitudes and preferences, beliefs and predictions, behavior and experiences – both past and present” (p. 207). Haimour and Obaidat’s survey (2013) aimed to investigate elementary special and general school teachers’ attitudes toward inclusion of students with ASD in the general education setting in Jeddah (Appendix A). The first section of the survey contained seven items soliciting information about the teachers' background, such as gender, teaching experience, type of school, and level of education. This survey used a Likert Scale that contained 24 items, answered by a five-multiple-choice response: strongly agree, agree, not sure, disagree, strongly disagree. While 13 items of the survey were positive items (1, 2, 5, 7, 8, 9, 10, 14, 15, 18, 19, 22 and 23), the other 11 items of the survey were reverse scored items, stated in the negative (Haimour & Obaidat, 2013). For the items phrased negatively, items were reverse coded because a response of “strongly disagree” was considered the more positive response. For example, a response of 1 “strongly disagree” to negative items were converted to 5 (Haimour & Obaidat, 2013). The researcher modified the survey by adding some items so that all the research questions can be answered. For example, the researcher included some variables in the demographic section to cover all variables for this study (Appendix B). The researcher sent the survey to three Ph.D. candidates majoring in special education for feedback. Accordingly, minor revisions were made. Haimour and Obaidat (2013) reported the survey reliability as .90. The
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Survey’s reliability was measured again using Cronbach Alpha after collecting the data. The researcher reported it as .92 (See chapter 4, Table2). The validity of the current survey had been assessed and verified previously by the developers of the survey (Haimour & Obaidat 2013). Therefore, the survey validity and reliability had been confirmed.

Data Collection Procedures

After the researcher obtained approval from the Institutional Review Board (IRB), the researcher created a Qualtrics survey, which is an online survey that enables researchers to do and share surveys and get the survey results. The researcher sent the survey link to secondary school teachers using social media apps Twitter and WhatsApp. More specifically, some employers in the Ministry of Education in Saudi Arabia provided the researcher with groups in WhatsApp for secondary school teachers. The researcher sent the invitation to secondary school teachers’ groups. Furthermore, the researcher distributed the survey to secondary school teachers using Twitter. The survey link was also retweeted via Twitter by some accounts once distributed. For both WhatsApp and Twitter, when the teachers received the link, the first page of the survey was the invitation letter and the second page of the survey was the informed consent. For informed consent, they were asked to click yes to proceed to the actual survey, which denoted their consent to participate in the study. The participants who received the survey link had to read clear and concise instructions. They also had to signed that “I am a secondary school teacher and I promise that I will complete the survey with a high level of accuracy”.

Data Analysis

The Attitudes toward Inclusion of Student with Autism Scale (ATISAS) was analyzed using SPSS utilizing a significance value of p = < .05. Teachers attitudes were measured by extracting the overall mean score of their responses on ATISAS. The mean score of 2.5 is a
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hypothetical separation limit between the positive and negative attitudes (Haimour & Obaidat, 2013). For example, an overall mean above 2.5 would be considered as teachers’ positive attitudes. On the other hand, an overall mean below 2.5 would be considered as teachers’ negative attitudes.

Table 1

Statistical Analysis for Research Questions

<table>
<thead>
<tr>
<th>N</th>
<th>Questions</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What are the attitudes of secondary school teacher towards inclusion of students with ASD?</td>
<td>Means and standard deviations</td>
</tr>
<tr>
<td>2</td>
<td>What placement options do secondary school teachers think are appropriate for students with ASD?</td>
<td>Frequency</td>
</tr>
<tr>
<td>3</td>
<td>Do teachers attitudes differ by their experience?</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>4</td>
<td>Do teachers attitudes differ by their gender?</td>
<td>An independent t-test</td>
</tr>
<tr>
<td>5</td>
<td>Do teachers attitudes differ by their type of school?</td>
<td>An independent t-test</td>
</tr>
<tr>
<td>6</td>
<td>Do teachers attitudes differ by their level of education?</td>
<td>An independent t-test</td>
</tr>
</tbody>
</table>

The Analysis by Research Question

The first question was: What are the attitudes of secondary school teachers towards inclusion of students with ASD in general education classrooms? This question was analyzed using descriptive analysis (means and standard deviations). A lower mean (below 2.5) indicated negative attitudes toward inclusion of students with ASD, a higher mean (above 2.5) indicated positive attitudes toward inclusion of students with ASD.

The second question was: What placement options do secondary school teachers think are appropriate for educating students with ASD? (Full inclusion – Partial inclusion- Special
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institutions- Based on the severity of ASD). The dependent variable for this question was secondary school teachers’ attitudes regarding inclusion of students with ASD. The independent variable for this question was teachers’ opinions of placement options for students with ASD. This question was analyzed using descriptive analysis for categorical data (Frequency).

The third question was: Do secondary school teachers’ attitudes regarding inclusion of students with ASD differ based upon years of teaching experience? (0-5 years – 6-10 years- 11 years and above). The dependent variable for this question was secondary school teachers’ attitudes regarding inclusion of students with ASD. The independent variable for this question was years of teaching experience, comprised of three levels. Since this question had more than two levels, it was analyzed using One-way ANOVA. One-way ANOVA is used to determine whether there are statistically significant differences between the means of three or more groups.

The fourth question was: Do secondary school teachers’ attitudes regarding inclusion of students with ASD differ based upon gender? (Male-Female). The dependent variable for this question was secondary school teachers’ attitudes regarding inclusion for students with ASD. The independent variable for this question was teacher gender. This question was analyzed using an independent t-test since it had two levels. The independent t-test is used to find out whether there are statistically significant differences between the means of two groups.

The fifth question was: Do secondary teachers’ attitudes regarding inclusion of students with ASD differ based upon types of schools? (Private- Public). The dependent variable for this question was secondary school teachers’ attitudes regarding inclusion of students with ASD. The independent variable for this question was types of schools. This question was analyzed using the independent t-test since it had two groups. The independent t-test test is used to find out whether there are any statistically significant differences between the means of two groups.
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The sixth question was: Do secondary teachers’ attitudes toward inclusion of students with ASD differ based upon level of education? (Undergraduate-Graduate). The dependent variable for this question was secondary school teachers’ attitudes regarding inclusion of students with ASD. The independent variable for this question was level of education with two levels. Again, since this question had two groups, the independent t-test test was used to find out whether there are any statistically significant differences between the means of two groups.

Assumptions for One-Way ANOVA

Some assumptions were checked once the researcher obtained the data. These assumptions included the normality assumption, homogeneity of variance assumption and independence assumption. The researcher checked the normality using multiple tests such as a histogram, QQ plot and Kolmogorov-Smirnov normality test. In addition, the researcher used Levene’s test to test the homogeneity of variance assumption. Furthermore, for the independence assumption, the researcher informed secondary school teachers to respond independently to the surveys without collaborating with other participants. Instructions were included clearly in the survey.

Summary

This chapter highlighted the research questions and hypotheses, design, participants, survey instrument, data collection, and analysis procedures. The survey research design was used to examine the attitudes of secondary school teachers in Riyadh and included 24 items. When the researcher obtained the approval from the Institutional Review Board (IRB), the researcher used WhatsApp and Twitter to distribute the surveys. Over 2700 surveys were completed by secondary school teachers in Riyadh. Finally, the surveys were analyzed using SPSS utilizing a significance value of $p = < .05$. More specifically, descriptive analysis (mean and standard
deviation), Frequency, an independent t-test, and One-way ANOVA were used to answer the research questions.
Chapter IV

RESULTS

Introduction

This study examined the attitudes of secondary school teachers toward the inclusion of students with ASD in Riyadh, Saudi Arabia. The Ministry of Education in Saudi Arabia has implemented the inclusion for students with ASD in elementary and middle schools. In addition, the Ministry of Education is committed to the inclusion of students with ASD at the secondary school level. In Riyadh, the attitudes of secondary school teachers toward inclusion of students with ASD has not been examined by researchers. Hence, it was important to examine the attitudes of these teachers regarding inclusion of students with ASD so as to ensure students with ASD receive appropriate education. This chapter reveals the research results by presenting the interpretation of nineteen tables and two figures.

Prior Data Analysis

Some tests were conducted before the data analysis. First, the normality and outliers of the data were checked using a histogram and Q-Q plot (Figures 1&2). In addition, the reliability of the data was checked by conducting Cronbach’s test (Table 2). Furthermore, the Levene's test of each exam was conducted to assess the equality of variances for a variable calculated for the groups in the study (Tables 3,5,6,7,8).

Figures1 indicates that the scores were approximately normally distributed and there were no outliers in the data. Figure 2 shows that the Normal Q-Q plot appears to deviate slightly from a straight line, which indicates a little degree of skewing to the left. Table 2 showed that the Kolmogorov-Smirnov\(^a\) test, \(D (2720) = .038, p = .001\) deviated from normal. In addition, the Shapiro-Wilk scores test, \(D (2720) = .992, p = .001\) deviated from normal. It was reported that
with a large enough sample size, normality should be assumed even if the distribution is not normally distributed (Field, 2009).

*Figure 1. Normality Test*
Figure 2. Normality Test

![Normal Q-Q Plot of Attitudes](image)

Table 2

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.038</td>
<td>2720</td>
</tr>
</tbody>
</table>
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Table 3 reported that Cronbach's alphas for 24 items of the survey was .92. These results show that the reliability analysis for internal consistency showed a high level of reliability.

Table 3

*Reliability Statistics*

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha based on items</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.918</td>
<td>.918</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 4 showed that Levene’s test for equality of variances indicated equal variances, F (2, 2717) = 2.836, p = .059. The assumption of homogeneity of variance has been met because the significance was .059, which is above the .05 level.

Table 4

*Levene's Test of Equality of Error Variances for years of experience*

<table>
<thead>
<tr>
<th>Dependent Variable: Score</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.836</td>
<td>2</td>
<td>2717</td>
<td>.059</td>
</tr>
</tbody>
</table>

Table 5 presented the results of a One-Way ANOVA which indicated that significant differences were seen among teachers’ experience regarding inclusion of students with ASD (F (2, 2717) = 27.987, p < .05 ηp² = .20.
Table 5

Tests of Between-Subjects Effects on teachers' attitudes by years of experience

<table>
<thead>
<tr>
<th>Sources</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>22.727a</td>
<td>2</td>
<td>11.363</td>
<td>27.987</td>
<td>.000</td>
<td>.020</td>
</tr>
<tr>
<td>Intercept</td>
<td>24599.180</td>
<td>1</td>
<td>24599.180</td>
<td>60586.000</td>
<td>.000</td>
<td>.957</td>
</tr>
<tr>
<td>Experience</td>
<td>22.727</td>
<td>2</td>
<td>11.363</td>
<td>27.987</td>
<td>.000</td>
<td>.020</td>
</tr>
<tr>
<td>Error</td>
<td>1103.159</td>
<td>2717</td>
<td>.407</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29128.219</td>
<td>2720</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>1125.885</td>
<td>2719</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 showed that Levene's test for equality of variances indicated equal variances, $F(1, 2718) = .001, p = .982$. Therefore, the assumption of homogeneity of variance has been met because the significance was .982, which is above the .05 level. The results of the independent t-test indicated that there were differences between male secondary school teachers and female secondary school teachers ($t(2718) = 2.497, p = .013, d = 0.13$).
Table 6

*Results of Independent Samples t-test for attitudes of secondary school teachers toward incision of students with ASD by gender*

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td><strong>Attitudes Equal</strong></td>
<td>.000</td>
</tr>
<tr>
<td>variances assumed</td>
<td></td>
</tr>
<tr>
<td><strong>Equal variances</strong></td>
<td>2.485</td>
</tr>
<tr>
<td>not assumed</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 indicated that Levene’s test for equality of variances equal variances, \( F (1, 2718) = 2.357, p = .125 \). The assumption of homogeneity of variance has been met because the significance was .982, which is above the .05 level. Table 7 also indicated that there were significant differences between private and public secondary school teachers (\( t (2718) = -3.460, p < .05, d = 0.21 \)).
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Table 7

Results of Independent Samples t-test for attitudes of secondary school teachers toward incision of students with ASD, by type of school

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>Attitudes Equal variances assumed</td>
<td>2.357</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-3.631</td>
</tr>
</tbody>
</table>

Table 8 indicated that Levene’s test for equality of variances equal variances, F (1, 2718) = .649, p = .421. The assumption of homogeneity of variance has been met because the significance was .421, which is above the .05 level. Tables 8 also indicated that there were significant differences between secondary school teachers who had graduate degrees and secondary school teachers who had undergraduate degrees (t (2718) = -5.038, p < .05, d = 0.31).
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Table 8

Results of Independent Samples t-test for attitudes of secondary school teachers toward incision of students with ASD by level of education

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Attitudes Equal variances assumed</td>
<td>.649</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-4.875</td>
</tr>
</tbody>
</table>

Demographics

The demographic information about the participants is presented in Tables 1, 2, 3, 4, and 5. Data from 2720 surveys were analyzed using SPSS. Table 9 indicated that about 17% (n = 463) of the participants were male secondary school teachers while about 83% (n = 2257) were female secondary school teachers.

Table 9

Frequency for gender on secondary school teachers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>463</td>
<td>17.0</td>
</tr>
<tr>
<td>Female</td>
<td>2257</td>
<td>83.0</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>
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Table 10 showed that 89.6% (n = 2437) of secondary school teachers participating in this study had an undergraduate degree (bachelor’s degree) while 10.4% (n = 283) had a graduate degree (doctoral degree- master’s degree).

Table 10

*Frequency for level of education of secondary school teachers*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>2437</td>
<td>89.6</td>
</tr>
<tr>
<td>Graduate</td>
<td>283</td>
<td>10.4</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 11 showed that 22.6% (n = 614) of secondary school teachers participating in this study had 0 to 5 years of teaching experience while about 24% (n = 652) had 6 to 10 years of teaching experience. About 53.5 (n = 1454) of secondary school teachers had 11 years or more teaching experience.

Table 11

*Frequency for secondary school teachers by experience*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>614</td>
<td>22.6</td>
</tr>
<tr>
<td>6-10 years</td>
<td>652</td>
<td>24.0</td>
</tr>
<tr>
<td>11 and above</td>
<td>1454</td>
<td>53.5</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 12 indicated that the majority of secondary school teachers participating in this study 87.6% \((n = 2384)\) teach at public schools while 12.4% \((n = 336)\) of them teach at private schools.

Table 12

*Frequency for type of school of secondary school teachers*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>2384</td>
<td>87.6</td>
</tr>
<tr>
<td>Private</td>
<td>336</td>
<td>12.4</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 13 showed that about 73.3% \((n = 1995)\) of the secondary school teachers did not take any special education courses while 19.3 \((n = 525)\) took one to three special education courses, and about 7.4% \((n = 200)\) of secondary school teachers took more than three special education courses.

Table 13

*Frequency for the number of special educating classes of secondary school teachers*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>1995</td>
<td>73.3</td>
</tr>
<tr>
<td>1-3 class</td>
<td>525</td>
<td>19.3</td>
</tr>
<tr>
<td>More than 3</td>
<td>200</td>
<td>7.4</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Data Analysis by Research Question

1. What are the attitudes of secondary school teachers toward inclusion of students with ASD in the general education classrooms?

Teachers’ attitudes were measured by extracting the overall mean score of teachers’ responses on the Attitudes toward Inclusion of Student with Autism Scale (ATISAS). The mean score of 2.5 is a hypothetical separation limit between the positive and negative attitudes (Haimour & Obaidat, 2013). If the overall mean of teachers’ response to the ATISAS was above 2.5, the teachers’ attitudes toward inclusion of students with ASD would be reported as positive attitudes. However, if the overall mean of teachers’ response was below 2.5, the teachers’ attitudes would be reported as negative attitudes. Table 14 showed that the overall mean of teachers’ responses to the 24 items of ATISAS was \( M = 3.2086 \) \( SD = .64349 \). This result indicated that secondary school teachers had slightly positive attitudes toward inclusion of students with ASD in Riyadh.

Table 14

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude score</td>
<td>2720</td>
<td>1.21</td>
<td>4.83</td>
<td>3.2086</td>
<td>.64349</td>
</tr>
</tbody>
</table>

2. What placement options do secondary school teachers think are appropriate for educating students with ASD?

The teachers’ response to Question 2 is presented in the Table 15. About 4.2% \( (n = 114) \) of the secondary school teachers agreed that full inclusion is appropriate for educating students with ASD. About 21.1% \( (n = 574) \) of the secondary school teachers agreed that partial inclusion is appropriate for educating students with ASD. About 24.2% \( (n = 659) \) of the secondary school teachers agreed that special institution is appropriate for educating students with ASD. Finally,
about 50.5% \((n = 1373)\) of the secondary school teachers agreed that the students with ASD placement should be chosen based on the individual’s case.

Table 15

*Frequency for secondary school teachers on placement option for students with ASD*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full inclusion</td>
<td>114</td>
<td>4.2</td>
</tr>
<tr>
<td>Partial inclusion</td>
<td>574</td>
<td>21.1</td>
</tr>
<tr>
<td>Special institution</td>
<td>659</td>
<td>24.2</td>
</tr>
<tr>
<td>Based on severity of ASD</td>
<td>1373</td>
<td>50.5</td>
</tr>
<tr>
<td>Total</td>
<td>2720</td>
<td>100.0</td>
</tr>
</tbody>
</table>

3. **Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their years of teaching experience?**

Table 16 showed the results of descriptive statistics for experience. There were three groups for teacher’s years of experience: 0-5 years, 6-10 years, and 11 and more years. The group of teachers with 0-5 years had 614 teachers while the group of teachers with 6-10 years had 652 teachers. The group of teachers with 11 and more years of experience had 1454 teachers. More specifically, the group of teachers with 0-5 years of experience had a significantly higher mean toward inclusion for students with ASD inclusion score \((M=3.3493; \ SD= .60290)\) than teachers with 6 to 10 years of experience \((M = 3.2537; \ SD= .65030)\) and teachers with more than 11 years of experience \((M = 3.1289; \ SD= .64329)\). The results of a one-way ANOVA which indicates that significant differences were seen among teachers’ experience regarding inclusion of students with ASD \(F (2, 2717) = 27.987, \ p <.05 \ \eta^2 = .20\). Therefore, the researcher rejected
INCLUSION OF STUDENTS WITH ASD

the null hypothesis and concluded that significant differences existed among teachers’
experience regarding inclusion of students with ASD.

Table 16

*Descriptive statistics for experience of secondary school teachers*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>3.3493</td>
<td>.60290</td>
<td>614</td>
</tr>
<tr>
<td>6-10 years</td>
<td>3.2537</td>
<td>.65030</td>
<td>652</td>
</tr>
<tr>
<td>11 and above</td>
<td>3.1289</td>
<td>.64329</td>
<td>1454</td>
</tr>
<tr>
<td>Total</td>
<td>3.2086</td>
<td>.64349</td>
<td>2720</td>
</tr>
</tbody>
</table>

Since there were differences among teachers’ experience regarding inclusion of students
with ASD, Tukey’s HSD was performed to examine these differences. Table 17 showed the
results of the Post-hoc test which indicated the three groups of teachers were significantly
different because of p value < .05. The group of teachers with 0-5 years of experience had a
significantly higher mean toward inclusion for students with ASD inclusion score (M=3.3493;
SD= .60290 p = .021) than teachers with 6 to 10 years of experience (M = 3.2537; SD=.65030; p
= .001) and teachers with more than 11 years of experience (M = 3.1289; SD=.64329; p =.001).
INCLUSION OF STUDENTS WITH ASD

Table 17

*Multiple Comparisons: Tukey of secondary school teachers experience*

<table>
<thead>
<tr>
<th>Group</th>
<th>Experience</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 0-5 years</td>
<td>6-10</td>
<td>.0956*</td>
<td>.03583</td>
<td>.021</td>
<td>.0116</td>
<td>.1797</td>
</tr>
<tr>
<td></td>
<td>11 &amp; above</td>
<td>.2205*</td>
<td>.3067</td>
<td>.000</td>
<td>.1485</td>
<td>.2924</td>
</tr>
<tr>
<td>2) 6-10 years</td>
<td>0-5</td>
<td>-.0956*</td>
<td>.3583</td>
<td>.021</td>
<td>-.1797</td>
<td>-.0116</td>
</tr>
<tr>
<td></td>
<td>11 &amp; above</td>
<td>.1248*</td>
<td>.03003</td>
<td>.000</td>
<td>.0544</td>
<td>.1952</td>
</tr>
<tr>
<td>3) 11 &amp; above</td>
<td>0-5</td>
<td>-.2205*</td>
<td>.03067</td>
<td>.000</td>
<td>-.2924</td>
<td>-.1485</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>-.1248*</td>
<td>.03003</td>
<td>.000</td>
<td>-.1952</td>
<td>-.0544</td>
</tr>
</tbody>
</table>

4. **Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon their gender? (Male-Female)**

Table 18 showed the results of descriptive statistics based upon the gender of each secondary school teacher toward inclusion of students with ASD. The number of male teachers participated in this study were 436, while the number of female teachers were 2257. Table 18 showed that scores the male secondary school teachers as (M = 3.2765, SD = .64686) while the female secondary school teachers (M = 3.1946, SD = .64305). Results of the independent t-test indicated that there were differences by gender (t (2718) = 2.497, p = .013, d = 0.13). Therefore,
the researcher rejected the null hypothesis and concluded that differences existed between male
and female secondary school teachers regarding the inclusion of students with ASD.

Table 18

*Descriptive Statistics for gender of secondary school teachers toward Inclusion of students
with ASD*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>463</td>
<td>3.2765</td>
<td>.64686</td>
<td>.03006</td>
</tr>
<tr>
<td>Female</td>
<td>2257</td>
<td>3.1946</td>
<td>.64205</td>
<td>.01351</td>
</tr>
</tbody>
</table>

5. **Do secondary school teachers’ attitudes toward inclusion of students with**
   **ASD differ based upon their types of schools?**

Table 19 showed the results of descriptive statistics by type of schools. There were two
groups of schools: public and private schools. There were 2384 teachers in the public school
group and 336 teachers in the private school group. Table 19 indicated that scores were
significantly higher for secondary school teachers in private schools (M = 3.3220, SD = .60671)
than secondary school teachers in public schools (M = 3.1926, SD = .6470). The results of the
independent t-test indicated that there were significant differences by type of school t (2718) = -
3.460, p < .05, d = 0.21). Therefore, the researcher rejected the null hypothesis and concluded
that differences existed between private and public secondary school teachers regarding the
inclusion of students with ASD.
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Table 19

Descriptive Statistics for secondary school teachers toward Inclusion of students with AS, by type of school

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>2384</td>
<td>3.1926</td>
<td>.64703</td>
<td>.01325</td>
</tr>
<tr>
<td>Private</td>
<td>336</td>
<td>3.3220</td>
<td>.60671</td>
<td>.03310</td>
</tr>
</tbody>
</table>

6. Do secondary school teachers’ attitudes toward inclusion of students with ASD differ upon their level of education?

Table 20 showed the results of descriptive statistics based on level of education. There were two groups of teachers’ level of education: undergraduate degree and graduate degree. The number of teachers who had an undergraduate degree was 2437 while 283 had a graduate degree. Table 20 indicated that scores were significantly higher for secondary school teachers who had graduate degree (M = 3.3902, SD = .66483) than secondary school teachers who had undergraduate degree (M = 3.1875, SD = .63776). Results of the independent t-test indicated that there were significant differences by teacher level of education (t (2718) = -5.038, p < .05, \(d = 0.31\)). Therefore, the researcher rejected the null hypothesis and concluded that there were differences between teachers who had graduate degrees and teachers who had undergraduate degrees regarding the inclusion of students with ASD.
### Table 20

Descriptive Statistics for secondary school teachers toward Inclusion of students with ASD, by level of education

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>2437</td>
<td>3.1875</td>
<td>.63776</td>
<td>.1292</td>
</tr>
<tr>
<td>Graduate</td>
<td>283</td>
<td>3.3902</td>
<td>.66483</td>
<td>.03952</td>
</tr>
</tbody>
</table>
Chapter V

DISCUSSION

This study investigated the attitudes of secondary school teachers toward inclusion of students with ASD with their typical developing peers at the secondary school level in Riyadh. As mentioned previously, the Ministry of Education in Saudi Arabia has included students with ASD in elementary and middle schools. In addition, the Ministry of Education is committed to the inclusion of students with ASD at secondary schools. Prior to this study, the attitudes of secondary school teachers toward inclusion of students with ASD had not been examined in Riyadh. Therefore, examining these attitudes of the secondary school teachers regarding the inclusion of students with ASD could be beneficial in ensuring that students with ASD receive appropriate education. Briefly, the results of the study indicated that secondary school teachers in Riyadh had slightly positive attitudes toward the inclusion of students with ASD. In addition, the results of the study revealed that the attitudes of secondary school teachers differed based on variables like teachers’ experience, level of education, gender, and type of school. This chapter includes the discussion of the research findings and how these findings are related to the literature review. In addition, this chapter presents the research implications, limitations, and future research questions.

Summary of Research Findings

This study examined the attitudes of secondary school teachers toward the inclusion of students with ASD. The study revealed that secondary school teachers in Riyadh had slightly positive attitudes toward the inclusion of students with ASD. Second, the study examined how the secondary school teachers’ attitudes toward inclusion of students with ASD differ based on variables such as teachers’ gender, experience, type of school, and level of education. In this
study, all research variables were found to be significant and provided helpful information about the impact of teachers’ attitudes toward the inclusion of students with ASD in Riyadh. Third, this study investigated teachers’ opinions regarding the appropriate placement options for students with ASD. About 50.5% (n = 1373) of the secondary school teachers believed that the severity of ASD should determine the placement options for student with ASD. Only 4.2% (n = 114) of the secondary school teachers believed that full inclusion is appropriate for educating students with ASD, while 21.1% (n = 574) of the secondary school teachers agreed that partial inclusion is appropriate for educating students with ASD. About 24.2% (n = 659) of the secondary school teachers agreed that the special institution is appropriate for educating students with ASD.

Several research questions guided this study, and the following section presents the questions and their discussion.

Discussion of Research Findings

Teacher Attitudes Toward Inclusion

The first research question was “What are the attitudes of secondary school teachers toward including students with ASD in the general education classrooms?” The overall mean of teachers’ responses to the 24 items of ATISAS was (M = 3.2086 SD = .64349). Therefore, the secondary school teachers in this study had slightly positive attitudes toward inclusion of students with ASD (Appendix D). The result of this study is consistent with results from studies conducted by Alfaiz (2006), Alhudaithi (2015), Alzaidi (2017), Haimour and Obaidat (2013). Item four in the survey asked secondary school teachers if the inclusion of students with ASD is a right for them or not. In this study, most of the secondary school teachers believed that inclusive education is a right for students with ASD. More specifically, secondary school teachers who participated in this study agreed that students with ASD must receive their
education with their developing peers in general education classroom. Again, the overall mean of secondary school teachers responding to the survey items showed that teachers had positive attitudes toward inclusion of students with ASD.

The results of this study were inconsistent with results from similar studies (Avramidis et al., 2000; Chung et al., 2015 Forlin & Hopewell, 2006), in which they found that teachers had negative attitudes toward inclusion of students with disabilities, including students with ASD. Although secondary school teachers in this study had positive attitudes toward inclusion of students with ASD, most teachers who participated in this study slightly agree that the inclusion of students with ASD as ineffective due to the lack of their social and academic skills. Several research studies indicated that teachers perceived students with ASD as having low levels of academic achievement and emotional and social development (Ashburner, Zivaini, & Rodger, 2010; Chung et al., 2015; Emam & Farrell, 2009). This can impact how teachers support student with ASD academically or socially. Consequently, teachers may unintentionally treat students with ASD unequally (Chung et al., 2015).

Most secondary school teachers who participated in this study thought that they are unprepared to teach students with ASD. Particularly, responses to items three and 23 in the survey of this study showed that most secondary school teachers were not sure if they could work with students with ASD. Moreover, responses on item six showed that teachers rated training as important for teaching students with ASD. More specifically, item six in the survey had the highest mean among all items of this study survey, which asked teachers if teacher training is critical for successful inclusion of students with ASD in the classroom. In addition, the survey asked the secondary school teachers, “How many special education classes did you complete during undergraduate/graduate school?” Approximately 2000 secondary school
teachers did not take any special education classes. The combination of these items explained that most of the secondary school teachers participating in this study think that they are unprepared to teach students with ASD (See Appendix D). The results of this study were consistent with research indicating that most general education teachers feel inadequately prepared to support students with ASD socially, academically, and behaviorally (Hinton et al., 2008; Horrocks et al., 2008; Symes & Humphrey, 2010). This is due to how the preparation programs for general education teacher in Saudi Arabia. Saudis’ preparation programs for general teachers do not offer special education classes (Aldabas, 2015). Item six in the survey showed that training and professional development programs for secondary school teachers are critical when implementing inclusion in high schools. Much work needs to be done regarding teachers’ preparation programs and professional development so that teachers can meet the needs of students with ASD. It was explained that “in Saudi Arabia, there is a need to establish professional development programs to prepare teachers and other school staff for inclusive classrooms before rolling out the real process of inclusive learning” (Aldabas, 2015, p.1166).

Placement Options for ASD

The second research question examined was “What placement options do secondary school teachers think are appropriate for educating students with ASD?” Secondary school teachers were given four options to choose from: (1) Full inclusion, (2) Partial inclusion, (3) Special institution, and (4) Based on the severity of ASD. About 50.5% ($n = 1373$) of the secondary school teachers believed that the severity of ASD should determine the placement option of students with ASD, whether it is full inclusion, partial inclusion or special institution. However, only about 4.2% ($n = 114$) of the secondary school teachers believed that full inclusion is appropriate for educating students with ASD, about 21.1% ($n = 574$) of the secondary school
teachers agreed that partial inclusion is appropriate for educating students with ASD, and finally 24.2% \((n = 659)\) of the secondary school teachers agreed that placing these students in a special institution is appropriate for educating them. These results showed that the severity of ASD may influence teachers’ attitudes toward inclusion of students with ASD since most of secondary school teachers believed that the placement options for these students should be determined based on the severity of ASD. Moreover, item 15 in the survey asked teachers if they agreed that students with mild ASD are the only students that must be included in the general education classroom. Secondary school teachers had slightly positive attitudes regarding item 15. This result indicated that secondary school teachers would prefer to include students diagnosed with mild ASD rather than students diagnosed with moderate or severe ASD. This result was in line with the results of multiple studies (Abed & Alrawajfh, 2017; Al-Zyoudi, 2006; Avramidis et al., 2000; Ryan, 2009) which reported that the severity of a disability influences educators’ attitudes towards the inclusion of students with that disability. It also has been reported that Saudi teachers preferred to include students with mild or moderate disabilities rather than students with severe disabilities (Alquraini, 2012). Therefore, the severity of a disability may change teachers’ attitudes from positive to negative.

**Years of Experience and Teachers’ Attitudes**

The third research question examined was “Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon years of teaching experience?” Teachers participating in this study were divided into three groups: teachers with 0 to 5 years of teaching experience, teachers with 6 to 10 years of teaching experience, and teachers with 11 or more years of teaching experience. Results showed that teachers’ attitudes toward inclusion of students with ASD differed based on years of teaching experience. More specifically, the group
of teachers with 0-5 years of experience had a significantly higher mean toward inclusion of students with ASD than teachers with 6 to 10 years and 11 or more years of experience. Moreover, teachers with 6 to 10 years of teaching experience had a higher mean toward inclusion of students with ASD than teachers with 11 or more years of experience. The results of this question were consistent with studies conducted by Alfaiz (2006), Alhudaithi (2015), Al-Zyoudi (2006), Haimour and Obaidat (2013), and Showalter-Barnes (2008) which found that teachers with less years of experience were more supportive of inclusion of students with ASD than teachers who had many years of teaching experience. This result could be due to the idea that teachers who just graduated being excited to teach students with ASD and having the needed skills to teach them. Research showed teachers with less years of experience were found to be more knowledgeable about students with disabilities and about their own strategies than teachers with more years of teaching experience (NCATE, 2006; Parasuram, 2006). Moreover, in Saudi Arabia, Alzaidi (2017) documented that “the older teachers had also faced obstacles due to the poor university curricula at the time of their pre-service preparation. In contrast, the new teachers had more knowledge and had been educated under more relevant university curricula” (p.219). This may explain why teachers with less years of experience had more positive attitudes toward inclusion of students with ASD.

However, this finding was inconsistent with studies conducted by Al-Ahmadi (2009) and Ernst and Rogers (2009) in which they found that teachers with more years of experience tended to have more favorable attitudes toward inclusion of students with ASD. Some research studies showed spending more time with students with ASD positively influence teachers’ attitudes toward inclusion of students with ASD (Chung et al., 2015; Goodman & Williams, 2007; Park & Chitiyo, 2011).
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Gender and Teachers’ Attitudes

The fourth research question examined was “Do secondary school teachers’ attitudes toward inclusion of students with ASD differ by gender?” The results of this study indicated that there were differences between male and female secondary school teachers regarding the inclusion of these students. More specifically, the results for this question indicated that the male secondary school teachers had more positive attitudes than the female secondary school teachers. The result for this question was consistent with results from studies conducted by Al-Ahmadi (2009) and Alquraini (2012) in which they also found that male teachers had more positive attitudes than female teachers toward inclusion of students with disabilities. It was reported that 85% of employed Saudi women work in the education field (Alhudaithi, 2015). Alquraini (2012) explained that “under the values of Saudi Arabia, most girls should be educated to become teachers, nurses and physicians only; they cannot be engineers or soldiers” (p.179). This implies that Saudi females may go into teaching whether they prefer to or not. Therefore, this may influence the attitudes of female teachers in Saudi Arabia. Another explanation might be that the majority of students with ASD are males, and in Saudi Arabia, they attend boys’ schools where the teachers are males. Literature indicated that teachers’ positive attitudes toward inclusion of students with ASD are enhanced by spending more time with students with ASD (Chung et al., 2015; Park & Chitiyo, 2011).

On the other hand, several studies indicated that female teachers had more favorable attitudes toward inclusion of students with ASD than male teachers (Abed & Alrawajfh, 2017; Alghazo & Gaad, 2004; Al-Zyoudi, 2006; Leyster, 1994; Park & Chitiyo, 2011). Other researchers (Avramidis et al., 2001; Parasuram, 2006; Van Reusen, Shoho, & Barker, 2001) found that teachers’ attitudes toward inclusion did not differ by gender. Based on these varied
results, gender as a single variable to teachers attitudes toward inclusion cannot be determined as having a positive or negative impact.

**Type of School and Teachers’ Attitudes**

The fifth research question examined was “Do secondary school teachers’ attitudes toward the inclusion of students with ASD differ based upon types of schools (Private- Public)?” The results of this study indicated that secondary school teachers in private schools had more positive attitudes towards inclusion of students with ASD than secondary school teachers in public schools. This result may be due to the fact that the number of students in public schools’ classrooms is larger than the number of students in private schools’ classrooms. Several studies revealed that the number of students in the classroom influenced teachers’ attitudes toward inclusion (Anderson, Klassen, & Georgiou, 2007; Forlin, & Loreman, 2007). When inclusion is implemented, teachers prefer to teach in a classroom that has a small number of students. Another reason for this result could be that teachers who teach in private schools have access to more resources. A study by Burstein, Sears, Cabello, and Spagna (2004) supported this theory that teachers’ attitudes toward inclusive education can be different based on the availability of resources. Another explanation might be that many Saudi teachers who teach in private schools are recent graduates and unable to find a teaching opportunity in public schools. As a result, they go to teach in private schools until they have an opportunity to teach in public schools. Hence, Saudi teachers in private schools tend to have less teaching experience. This explanation could be linked to the responses related to the second question which indicated that teachers with less teaching experience had more positive attitudes toward the inclusion of students with ASD than teachers with more experience.
Level of Education and Teachers’ Attitudes

The sixth research question examined was “Do secondary school teachers’ attitudes toward inclusion of students with ASD differ based upon level of education (Undergraduate-Graduate)?” The results for this question indicated that significant differences existed based on the teacher’s level of education. More specifically, teachers with a graduate degree had more positive attitudes toward the inclusion of students with ASD than teachers with only an undergraduate degree. The results of this question were consistent with studies conducted by Haimour and Obaidat, (2013) and Parasurma (2006), which found that teachers who held master’s degrees were found to have more positive attitudes toward the inclusion of students with ASD than teachers with bachelor’s degrees. As was found in this study and similar studies, teachers with a high level of education commonly had more positive attitudes toward the inclusion of students with ASD (Haimour & Obaidat, 2013; Hsien, Brown, & Bortoli, 2011; Parasurma, 2006). This result may be due to the idea that “postgraduate level designed to form educational philosophy in more holistic manner, and thus contribute in changing attitudes and ideas about a lot of concepts and topics, including the inclusion of students with special needs in regular schools” (Haimour & Obaidat, 2013, p. 2975). However, the results of other studies (Abed & Alrawajfh 2017; Alfaiz, 2006; Alquraini, 2012; Avramidis, Bayliss & Burden, 2000) were inconsistent with these results and indicated that teachers’ higher level of education did not affect their attitudes toward the inclusion of students with disabilities including students with ASD.
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Conclusion

Research Implications

This study found that secondary school teachers had positive attitudes toward the inclusion of students with ASD. However, items three and 23 in the survey showed that most of secondary school teachers are not prepared to teach students with ASD. Meanwhile, the highest item’s mean in the survey was item six which asked teachers if they think that teacher training is essential for successful inclusion of students with ASD. Research suggested that improving teachers’ pre-service and in-service programs can help them to be better prepared to include students with disabilities (Aldabas, 2015; Alquraini, 2010). The pre-service programs for secondary school teachers should teach future teachers about the characteristics of students with ASD as well as some effective strategies that work for these students. Research documented that “colleges also should educate both general teachers and special education teachers about the importance of having children with disabilities in regular classes and the importance of their collaboration as the key to successful inclusion” (Alquraini, 2010, p.153). In addition, the in-service programs for secondary school teachers should occasionally provide teachers with updated topics in the field. Aldabas (2015) reported that “there is a need in Saudi Arabia to offer professional development programs for all in-service teachers focusing on inclusive education and how to deal with students with disabilities in their classrooms” (p.1164).

This study found that most secondary school teachers believed that the placement options for students with ASD should be determined by the severity of the symptoms. Research showed that the “severity of disability shows an inverse relationship with positive attitudes such that as the perception of severity increases, teachers’ positive attitudes decrease” (Dupoux, Hammond, Ingalls, & Wolman, 2006, p.5). Kavale (2000) indicated that the severity of the disability
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influenced teachers’ acceptance of students with ASD in their classrooms. The attitudes of secondary school teachers may change based on the severity of ASD. Therefore, teachers’ preparation and professional development programs are critical to the successful inclusion of students with ASD. Teachers’ preparation programs should encourage future teachers to interact with students with ASD as well as understand their uniqueness. Teachers’ professional development should emphasize the need for follow-up training, such as feedback, manuals, and online support, after delivering professional development to increase the likelihood of implementing effective instructional strategies (Myers, & DeLuca 2010). This approach helps to ensure that teachers can meet the need of all students in the classroom.

Furthermore, research indicated that “collaboration methods, such as professional learning communities and co-teaching, are effective for supporting students with disabilities in general classrooms as they provide opportunities for all teachers to work together in meeting diversity needs among learners in one classroom” (Aldabas, 2015, p.1165). A necessary component to the successful implementation of inclusion for students with ASD in the regular classroom environment is that all the professionals need to work collaboratively to ensure that the needs of every student are met so that all are supported in reaching their maximum potential (Voltz, Brazil & Ford, 2001). Hence, general and special education teachers need to work together to meet the students’ needs regardless of the severity of the disability.

The results of this study revealed that teachers with more experience were found to have lower positive attitudes than those with less experience. Therefore, teachers with more experience should be provided with well-designed in-service training. “There is a need in Saudi Arabia to offer professional development programs for all in-service teachers focusing on inclusive education and how to deal with students with disabilities in their classrooms” (Aldabas,
INCLUSION OF STUDENTS WITH ASD

2015, p.1164). Improving professional development programs can help teachers with more experience learn new information about inclusive education. The teacher professional development programs need to focus on theoretical and practical implications of research. The theoretical implication is that teachers should be taught about the rights of students with disabilities and why they should be included with their typically developing peers. The practical implication is that teacher should be provided with strategies that are based on evidence-based practices (EBP) and allow them to apply these strategies. In a study completed by Brownell et al., (2013), they found that educators often knew more about the content in which they were teaching compared to the evidenced based practices used to teach the content. Providing teachers who graduated a decade ago with information about EBPs of ASD will help them to increase their knowledge regarding how to treat students with ASD thereby raising their positive attitudes toward the inclusion of these students.

The results of this study revealed that teachers’ level of education was found to be related to their attitudes toward inclusion of students with ASD. It found that teachers with undergraduate degrees had less positive attitudes than teachers with graduate degrees. The findings of this study suggested that teachers with undergraduate degree should seek higher education so that they can obtain more knowledge about ASD which will increase the chance that they will have more positive attitudes toward inclusion of students with ASD. Haimour and Abdulhade (2013) conducted two studies; one examined teachers’ attitudes toward inclusion of students with ASD, while the other examined teachers’ knowledge about ASD. The results of their studies indicated that teachers with a higher education degree had more positive attitudes and knowledge about ASD than teachers with only an undergraduate degree. Therefore, “the Ministry of Education in Saudi Arabia should develop hiring qualifications for teachers and these
INCLUSION OF STUDENTS WITH ASD

should be included in teacher preparation programs in colleges of education in Saudi Arabian universities” (Aldabas, 2015, p.1164). In addition, the Ministry of Education in Saudi Arabia should encourage teachers to pursue higher studies so that teachers will be highly qualified to meet the needs of diverse students.

Research Limitations

The research had some limitations that could impact the ability to generalize the results of this study. The use of the convenience sample and the online survey could limit the generalizability of the results given the fact that results from a convenience sample can only be generalized within a population that was willing to participate. Similarly, this study focused only on secondary school teachers in Riyadh. In addition, most participants in this study were female teachers so that the role of gender could have skewed the results. Any or all of these reasons could have affected the ability to generalize the results of this study to the general population.

Recommendations for Future Research

Future research should examine secondary school teachers’ knowledge about ASD since in this study most of them reported the need for more training. Therefore, appropriate professional development programs can be provided for teachers. Furthermore, future research should examine the best way to deliver professional development for secondary school teachers. Also, future researcher might examine this topic using qualitative approaches so that teachers’ experience and attitudes toward inclusion of student with ASD can be better understood.

This study found that secondary school teachers with more years of experience had lower positive attitudes toward inclusion of students with ASD than teachers with less experience. Researchers could investigate the reasons behind this finding and identify ways to improve the attitudes of teachers with more years of experience. This study also revealed that female teachers
had less positive attitudes toward inclusion of students with ASD than male teachers. This result was consistent with that of the Saudi studies conducted by Ahmadi (2009) and Alquraini (2012). Other researchers could investigate the influence of gender on teachers attitudes in Saudi Arabia since the results from several other studies (Abed & Alrawajfh, 2017; Alghazo & Gaad, 2004; Al-Zyoudi, 2006; Leyster, 1994; Park & Chitiyo, 2011) indicated that female teachers have more positive attitudes than male teacher.

In addition, future research should also examine the pre-service teachers’ programs. Pre-service programs for secondary school teachers need to be examined since most teachers in this study felt they are unprepared to teach and include the students with ASD. Future research could also examine the attitudes of faculty members toward inclusion of students with ASD in Saudi universities. Students with ASD will be able to attend Saudi universities. However, the attitudes and knowledge of faculty members toward students with ASD in Saudi universities have not been examined by researchers.
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doi:10.1080/09687590600617352


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APPENDIX A

The Original Survey before the Researcher Modification

The Attitudes toward Inclusion of Student with Autism Scale (ATISAS) was developed for the present study and contains two sections. The first section is the key demographic variables (gender, position, education level, teaching experience) and a question about previous contact or experiences with individuals with Autism. The second section, The Attitudes toward Inclusion of Student with Autism Scale (ATISAS), is a Likert Scale that contains 24 items.

1. I believe that special education teachers are the only ones who should have to deal with children with Autism
2. I think that teachers with long experience are the only ones who can deal with autistic children
3. I believe that I have the ability to teach children with Autism in the regular class
4. I believe Students with autism have the right to receive all education within the regular schools
5. I believe frustrated when teaching students with autism
6. I think that training teachers in regular schools on how to deal with children with Autism will contribute to the success of their inclusion
7. I believe that the presence of students with Autism in regular classrooms will negatively affect the learning environment.
8. I prefer to teach in class room without students with autism
9. Students with autism should be separated from ordinary students into special education school
10. I believe that students with autism will not benefit from the activities in the public schools because of their limited abilities
INCLUSION OF STUDENTS WITH ASD

11 I believe that the integration of students with Autism in regular schools allows ordinary students to feel how much students with Autism suffer.

12 I believe that the integration of students with Autism in regular schools leads to improve their social interaction skills.

13 I believe that the presence of students with Autism in regular school will improve their academic skills.

14 Students with autism should not be taught in regular classes with non-disabled students because they require too much of the Teachers’ time.

15 Students with high functioning Autism is the only category that must be included.

16 Most or all regular classes can be modified to meet the needs of students with autism.

17 Students with autism should be integrated in the regular class for all the time.

18 I believe that the presence of students with ASD in regular school provides ordinary students with an unacceptable behaviors.

19 I believe that inclusion of students with autism in regular school is not effective because of their lack of social and academic skills.

20 I believe that responsibility of teaching students with autism is shared between regular classroom and special education teacher.

21 I think it is necessary to provide assistive special education services for students with autism within the regular school environment for the success of the integration programs.

22 I believe that the level of academic achievement for ordinary students would be adversely affected by the presence of students with Autism with them.
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23 I believe that regular education teachers would feel uncomfortable in implementing individualized educational plane if students with Autism are placed in general education classroom.

24 I believe the students with autism will lose the stigma of disability if they were placed in regular schools
APPENDIX B

The Modified Survey.

Demographic Information

1- What is your gender?
   - Male
   - Female

2- What is your level of education?
   - BA
   - MA
   - Ph.D.

3- What is your overall teaching experience?
   - 0-5 – years
   - 6-10 years
   - Over 11 years

4- Have you taught students with disabilities?
   - Yes
   - No

5- Type of school?
   - Public
   - Private

6- How many special education classes did you complete during undergraduate/graduate school?
   - None
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- 1-3
- More than 3

7. What placement options do you think are appropriate for educating students with ASD?
   (Full inclusion – Partial inclusion – Special institution – Based on the student’s severity of ASD)

8. Please select your answer based on the following questions (in a scale of 5, 1= strongly disagree and 5= Strongly agree)
   1. Special education teachers are the only ones who should deal with students with ASD
   2. Teachers with more experience are the only ones who can deal with students with ASD
   3. I have the ability to teach students with ASD in the regular class
   4. Students with ASD have the right to be educated in the secondary schools
   5. I feel frustrated when teaching students with ASD
   6. I think the success of inclusive education for students with ASD in secondary school depends on teachers training
   7. I believe that the presence of students with Autism in the general education classrooms will negatively affect the learning environment.
   8. I prefer to teach in a classroom without students with ASD
   9. Students with ASD should be educated in a separate special education school
   10. I think Students with ASD will not benefit from the activities in the public schools because of their limited abilities
   11. I think including students with ASD in secondary schools will enable students without disabilities to understand students with ASD’s struggles.
   12. I think including students with ASD in secondary schools will improve their social skills.
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13. I think including students with ASD in secondary schools will improve their academic skills.
14. I think students with autism will be frustrated because of inability to keeping up with their typical developing peers.
15. Students with mild Autism is the only category that must be included in the general education classroom.
16. The inclusion of students with ASD will help them have self-esteem.
17. Students with ASD should be partially integrated in the general education classroom.
18. Including students with ASD in secondary schools let students without disabilities learn inappropriate behaviors.
19. Including students with ASD in secondary schools is not effective due their lack of social and academic skills.
20. Teaching students with ASD is shared responsibility between general and special education teachers.
21. It is necessary to provide assistive special education services for students with ASD within the secondary school school environment to ensure the success of inclusive education.
22. students without disabilities’ academic achievement level would be adversely affected by including students with ASD in the general education classroom.
23. Secondary school teachers would feel uncomfortable to cooperate in the implementation of the individualized educational plan if students with ASD are placed in general education classroom.
24. Students with ASD will be less stigmatized if they are placed in regular secondary schools.
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Appendix C

This appendix is necessary to complete the dissertation. Your cooperation in filling out this questionnaire will help the researcher gain insight into the teaching staff's perceptions of the inclusion of students with autism in the secondary schools in the city of Riyadh. This study will also help decision-makers take the necessary actions when integrating students with autism in the Riyadh region. Therefore, I hope you will participate in this questionnaire, knowing that all the information obtained will be kept confidential and used only for research purposes.

Some observations

Participation in this study is due to the questionnaire of the English language to the Arabic language to appear questions and options in a consistent form.

For participation in the study, please click on "Agree to participate in this study".

If you have any observations about the questionnaire, please contact the researcher via the following email:
aljaffalm@duq.edu.

Thank you for your cooperation.

Mohamed Abdulaziz Al Jaffal
Ph.D.
Secondary School Teacher in the Riyadh region

Gender:

- Male
- Female

Academic Qualification:

- Bachelor
- Master
- Doctorate

The research requires a clear understanding of the information provided in this study. In the event of any observations, you should communicate them to the researcher using the following email:
aljaffalm@duq.edu.

Thank you for your cooperation.

Mohamed Abdulaziz Al Jaffal
Ph.D.
Secondary School Teacher in the Riyadh region

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Mohamed Abdulaziz Al Jaffal
Ph.D.
Secondary School Teacher in the Riyadh region

Gender:

- Male
- Female

Academic Qualification:

- Bachelor
- Master
- Doctorate
الخبرة

- 0-5 سنوات
- 6-10 سنوات
- 11 - فاكثر

هل حصلت على دورات تدريبية في التوحد

- نعم
- لا

هل سبق وأن تعاملت مع طلبة من ذوي اضطراب التوحد

- نعم
- لا

نوع المدرسة

- الحكومية
-اهلية

المكان المناسب لتعليم طلبة التوحد (دمج كلي - دمج جزئي - معاهد خاصة - بناء على شدة الإعاقة)

لا يوجد علمي التوحد

وضع اجابة واحدة فقط: الرجاء الاعتماد على المدارس الثانوية في المدارس الثانوية، الرجاء وضع اجابة واحدة فقط علماً بأنه لا توجد إجابات صحية وأخرى خاطئة إنما هي آراء شخصية.

الاتجاهات نحو دمج طلبة ذوي اضطراب التوحد في المدارس الثانوية: الرجاء وضع إجابة واحدة فقط علماً بأنه لا توجد إجابات صحية وأخرى خاطئة إنما هي آراء شخصية.

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## Appendix D

*Descriptive Statistics for survey items*

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(*) refers to a reverse coding item
ELECTRONIC CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: The Attitudes of Secondary School Teachers Regarding Inclusion of Students With Autism in Saudi Arabia

INVESTIGATOR: Mohammed Aljaffal

DVISOR:

Dr. Temple S. Lovelace
Duquesne University
600 Forbes Avenue
412B Canevin Hall
Pittsburgh, PA 15282
LovelaceT@duq.edu
412.396.4159

SOURCE OF SUPPORT: This study is being performed as partial fulfillment of the requirements for the doctoral degree in School of Education at Duquesne University.

PURPOSE: You are being asked to participate in a research study that seeks to examine the secondary school teachers’ attitudes toward inclusion of students with ASD. This study also aims to find out the factors that influence teachers’ attitudes. This study is to find out teachers’ opinion about the appropriate placement for students with ASD.

To qualify for participation in this stage of the research, you need to be a secondary school teacher in Riyadh.

PARTICIPANT PROCEDURES: By consenting to participate, you are agreeing to complete a survey. This research study seeks to gain a more robust vision of factors related to teacher perceptions about the inclusion of students with autism spectrum disorders (ASD). The survey that follows consists of a series of personal demographic questions about you and your role within the educational setting, as well as questions on your perceptions of the inclusion of
students with autism spectrum disorders. We estimate that this survey will take approximately 10 minutes to complete. These are the only requests that will be made of you.

RISKS AND BENEFITS: Your participation will help to improve the way in which we understand the perceptions secondary school teachers in inclusive settings. A benefit of participating in the study is the increased knowledge associated with understanding how we can support students with autism spectrum disorders in secondary schools in Riyadh.

Overall, the risks associated with this study are minimal. Because we are asking you about your perceptions on educating students with ASD, it is possible that you may feel uncomfortable disclosing your thoughts and opinions to some of the questions. Moreover, although we assure anonymity associated with the data you enter into this survey, it is possible that confidentiality could be compromised as explained by Qualtrics (https://www.qualtrics.com/security-statement/).

COMPENSATION: There will be no compensation for participating in this study. Additionally, participation in this project will require no monetary cost to you.

CONFIDENTIALITY: Your participation in this study and any information that you provide will be kept confidential at all times and to every extent possible. By participating in this survey, your responses will not be shared with other participants. Only members of the research team will have access to your responses for the purpose of data analysis. Qualtrics uses Transport Layer Security (TLS) encryption (also known as HTTPS) for all transmitted data. Qualtrics data is hosted by trusted data centers that are independently audited using the industry standard SSAE-16 method. All written and electronic forms and study materials will be kept secure. Your response(s) will only appear in statistical data summaries in aggregate form, meaning that for any item, it will not be possible to identify any one individual.

RIGHT TO WITHDRAW: You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time by contacting the primary investigators or his advisor. All study materials collected up to the point of your withdrawal will be kept as stated in the above confidentiality section. If you wish for us to destroy the materials related to your participation, we will do so upon request.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me and I have had an opportunity to ask questions prior to providing my consent. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, and that my withdrawal of consent will not affect my current or future relations with Duquesne University. On these terms, I certify that I am willing to participate in this research project. I understand that should I have any further questions about my participation in this study that I may contact Mr. Mohammed Aljaffal at aljaffalm@duq.edu or (4129320805) or Dr. Temple Lovelace at LovelaceT@duq.edu or 412.396.4159. Should I have any questions regarding protection of human subject issues, I may contact Dr. David Delmonico, Chair of the
INCLUSION OF STUDENTS WITH ASD

Duquesne University Institutional Review Board, at 412.396.1886. You are encouraged to maintain a copy of the researchers' contact information for your future reference.

Duquesne University's Institutional Review Board has approved/verified this research study.

Proceeding to the next page indicates that you have agreed to consent to participation in this survey. Thank you in advance for your time and consideration.
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APPENDIX F

Participant’s Consent Form

My name is Mohammed Aljaffal. I am pursuing my PhD degree at Duquesne university majoring in special education. Currently, I am doing my dissertation. My study topic is examining secondary school teachers’ attitudes toward inclusion of students with autism. You were chosen to participate in this study because you are a secondary school teacher in Riyadh. If you are not a secondary school teacher in Riyadh, please do not complete this survey.

Background Information:
The purpose of this study is to examine the secondary school teachers’ attitudes toward inclusion of students with ASD. This study also aims to find out the factors that influence teachers’ attitudes. This study is to find out teachers’ opinion about the appropriate placement for students with ASD.

Participants’ Procedures:
If you agree to participate in this study, you will be asked to complete a survey on attitude rating scale. This survey may take 5 minutes to be completed.

Confidentiality Statement:
Any information participants provide will be kept confidential. The researcher will not use any participants’ information for any purposes outside of this research study. In addition, the researcher will not include names identifying you in any way during this study.

Contacts Information:
You may ask any questions about the research study by contacting the researcher at cellphone: 4129320805 or email: aljaffalm@duq.edu

Participants’ Statement of Consent:
INCLUSION OF STUDENTS WITH ASD

I read the above information and agree to participate in this study. I have agreed to participate in this research study. By checking the appropriate box and signing below, demonstrates your participation in this research. As participant, I am agreeing to the terms described above and consent to participate in this study.

I agree to participate in the research________

I am a secondary school teacher________

I will complete the survey without collaborating with others ________