TEACHERS’ ATTITUDES TOWARD THE INCLUSION OF DEAF AND HARD OF HEARING STUDENTS IN REGULAR EDUCATION CLASSROOMS IN SAUDI ARABIA

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF EDUCATION

BY

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This study investigated teachers’ attitudes toward including Deaf and hard of hearing (D/hh) students in regular education classrooms in Saudi Arabia. In addition, the study analyzed how the teachers’ attitudes toward inclusion were influenced by the following variables: teaching position, training on inclusion the teachers had received, years of teaching experience, the teachers’ gender, prior work with students with disabilities, and having a family member with disabilities. The study utilized the “Opinion Relative to Integration of Students with Disabilities” (ORI) online survey to collect responses from 196 teachers. Overall, teachers in Saudi Arabia showed slight negative attitude toward teaching D/hh students in regular education classrooms. The independent variables of prior training about inclusion and previous experience teaching students with disabilities were significant variables that influenced the teachers’ attitudes. Other variables, including the area of education, gender, years of teaching experience, and having a family member with disability, did not seem to influence the teachers’ attitudes toward teaching D/hh students in regular education classrooms in Saudi Arabia.
DEDICATION

This dissertation could not have been completed without the love, support, patience, and encouragement that I have received from my parents, their constant prayers encouraged me to fight to the end. For that, I dedicate this achievement to them.

I also dedicate it to my lovely children Ghala and Basil. My children paid the biggest price, and went through hard time during my journey in pursuing my doctoral degree. It was primarily for their enormous sacrifice that I overcame all difficulties and I fought to the end. I did not want my absence from their precious early years to go without an achievement. I really hope this achievement will make them proud of me for the rest of their life.

My dedication also goes to my siblings, friends, and beloved ones who supported me throughout my journey. I love you all and I appreciate everything you have done for me.

Special thanks to the special one, Aisha, who entered my life in the very right moment and showed support and love that motivated me to complete my Dissertation.

Finally, I would love to dedicate my dissertation to all Saudi people with hearing impairment and the entire field of Deaf Education. I sincerely hope this humble work would help in improving the services in Deaf Education and impact the lives of Deaf and hard of hearing individuals for the better.
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CHAPTER 1

INTRODUCTION

Over the last two decades, many organizations and governments around the world have demonstrated a great interest in teaching students with disabilities in regular schools alongside their peers without disabilities. Concepts like “normalization”, “deinstitutionalization”, “integration”, and the “least restrictive environment” have emerged in response to the increasing pressure of human rights advocates in order to bring these changes to schools (Osgood, 2005). The international community of special education recognized “inclusive education” to be the best practice of teaching students with disabilities at the World Conference on Special Needs Education: Access and Quality in 2004. Inclusive education gives individuals with special needs the right to attend the schools they would go to if they did not have a disability. Thus, inclusive education programs should include all students in regular public schools regardless of their backgrounds, needs, or disabilities (Al-Mousa, 2010). As a result, most countries have developed legislation and policies that promote equal opportunity and access by teaching students with special needs the same curriculum in the same classroom as their peers without disabilities.

Saudi Arabia is not an exception. Saudi Arabia was the first Arab country that tried to implement inclusive education in 1984 (Al-Mousa, 2010). In 1996, Saudi Ministry of Education issued a new educational plan that contained 10 major items. The first item of that reform emphasized the role of regular schools in teaching students with special needs. This initiative was followed in 2002 by the publication of a document of rules and regulations for special education institutes and programs. Article number 18 of that document stated that regular schools are the natural environment for students with disabilities (The Document of Rules and Regulations for Special Education Institutes and Programs, 2002). Consequently, recent statistics published by the
Saudi Ministry of Education showed that students with disabilities who attended regular schools outnumbered their counterparts who attended segregated schools. For instance, 461 Deaf and hard of hearing (D/hh) male students went to special schools for the Deaf during the school year 2013 versus 1629 D/hh male students who attended programs in regular schools in the same period (Ministry of Education, 2013). These numbers indicate that the international movement toward inclusive education has vastly affected the educational environment and placement choices of Saudi D/hh students.

Official reports showed that nearly 78% of Saudi D/hh students attend regular schools, while only 22% are enrolled in special schools for the Deaf (Ministry of Education, 2013). Similarly, in the United States of America, approximately 86% of D/hh students have been placed in regular schools, whereas 14% attend other educational settings, such as residential schools for the Deaf (National Center for Education Statistics, 2012). Despite numbers that indicate most of D/hh students attend inclusive settings, the interpretation and implementation level of “inclusive education” and the “least restrictive environment” remains complicated and controversial, creating endless discussion among educators and professionals of Deaf education (Hallahan, Kauffman & Pullen, 2009). On one hand, a camp of educators supports regular school placement as the least restrictive environment for D/hh students (Lane, Hoffmeister, & Bahan, 1996). Another camp of educators, on the other hand, argues the research evidence reveals that D/hh students learn less in regular schools than their hearing classmates, and thus D/hh students need schools and programs that are specifically designed for them (Marschark & Hauser, 2012). In addition, the empirical research does not provide conclusive evidence that supports a placement option over other options (Erika-Brophy et al, 2012; Mishra & Singh, 2012). This controversy has resulted in different educational options for D/hh students, such as full inclusion...
in regular classrooms with support and services provided in the class (e.g., interpreters), partial inclusion where students learn in a separate classroom for the D/hh in the local regular school, or full enrollment in special schools for the Deaf (Marschark & Hauser, 2012).

With this lack of conclusive evidence, it is obvious that selecting a placement option for the deaf or hard of hearing students is a very complicated task for parents as well as schools. Both parents and schools want their children to succeed academically and socially. Every option seems to have pros and cons, and in some cases, those students move from one option to another trying to find the best education. This transition, in turn, could cause negative effects for them academically, emotionally, and socially. For instance, Marschark and Hauser (2012) stated a deaf student may be the only student with a hearing disability in the local school, so the school may not be well prepared to provide appropriate support. Another deaf student with a cochlear implant may succeed in a regular school setting but could be disconnected from the Deaf community, including his or her own family. The aim of inclusion is to provide access and equality. Access means communication; the lack of a spoken language can be a major barrier for Deaf and hard of hearing students in regular schools. In contrast, special schools for the Deaf may assist deaf students to succeed academically but disconnect them from the larger community who use spoken language for communication (Marschark & Hauser, 2012).

In November 2015, the Ministry of Education launched a new project called “Comprehensive Learning” to teach all students in regular neighborhood schools. Therefore, the legislation and policies in Saudi Arabia are promoting teaching students with disabilities in regular schools. Teaching D/hh students in regular classrooms is a multidimensional process that requires a thorough investigation to examine every aspect of the process and eliminate potential barriers and risks (Hallahan et al., 2009). The partial inclusion that is currently taking place in
Saudi Arabia may not be the best educational option for such students; hence, more research is needed to ensure the appropriate implementation of inclusive education that maximizes the positive outcomes of special education programs in Saudi Arabia and minimizes the negative ones. The current study was an attempt to investigate a significant aspect of this process: the attitudes of teachers toward teaching D/hh students in regular education classrooms.

**Statement of the Problem**

The Ministry of Education in Saudi Arabia—similar in many other countries—has enacted educational policies that endorse the philosophy of inclusive education, which has resulted in teaching the majority of students with disabilities in regular education schools. This trend is consistent with the international movement to educate students with disabilities in the least restrictive environment whenever appropriate. With this in mind, restrictiveness is not only a place or a physical barrier; it can also be a social context or attitude. The location where a student learns is not more important than meeting that student’s needs (Hallahan et al., 2009). The society and the schools must remove all environmental and social barriers in order to provide successful inclusion for D/hh students. School staff, students both with and without disabilities, parents, and everyone in the surrounding community needs to believe in the advantages of inclusive schools. Teachers in particular are the key players who put educational policies into practice, and any attempt to include D/hh students in regular education classrooms with their hearing peers will not succeed unless the teachers have positive attitudes toward inclusive settings and accept the responsibility to educate them in regular classrooms.

As of today, although more than 78% of Saudi D/hh students attend regular schools, the inclusion process is still merely partial (AlSharani, 2014). Most D/hh students in Saudi Arabia are placed in self-contained classrooms within the regular schools. Those special classes have
only D/hh students and are taught by a teacher who is trained to teach them. These students only get the opportunity to interact with hearing peers before classes, during recess, and after school but they never receive instruction in the regular classrooms. In addition, the majority of students who go to regular schools have mild to moderate hearing loss and use hearing aids, while most students with severe to profound hearing loss typically attend special schools for the Deaf (AlSharani, 2014). This practice reflects the definition of partial inclusion, which supports the claim that inclusion in Saudi Arabia is incomplete.

Al-Mousa (2010) identified four major obstacles to inclusion in Saudi Arabia: a) negative perceptions of parents of students with disabilities about inclusive settings; b) negative attitudes of some components of the society towards people with disabilities; c) schools’ physical environments were not prepared for students with disabilities and; d) regular schools’ requirements to accept students with disabilities. While half of these problems are directly related to attitudes towards inclusion, the other half are also indirectly related to attitudes. Parents tend to be overprotective of their children with disabilities and hence believe students with disabilities should go to special schools, which is an expectations of society as well (Alothman, 2014). However, if the Ministry of Education seriously believed in the benefits of inclusion, they should have prepared the schools’ structure to meet the needs of all students including those with disabilities, and also should have eliminated the rigorous requirements that prevent many students with disabilities from attending regular schools. Furthermore, Al-Mousa, Al-Saratawi, Al-Abduljabbar, Al-Batal and Al-Husain (2008) conducted a comprehensive national study to evaluate the Saudi experience of inclusion of students with disabilities. This was a large scale study with more than 23,000 participants, including parents, teachers, school administrators, and students both with and without disabilities. The researchers also used many
methods to collect data, such as academic achievement tests, adaptive behavior tests, and self-concept tests. Their findings showed that in general, there was a positive attitude towards inclusion, and the majority of the participants thought inclusion was useful for students with disabilities and that the spatial requirements and equipment were appropriate and had been used effectively. Nonetheless, school personnel who worked with D/hh students showed less agreement with the attitude measures than their counterparts who worked with students with other types of disabilities (intellectual disabilities, visual disabilities, and multiple disabilities). Similarly, Hanafe (2009) investigated the essential requirements for including D/hh children in general classrooms as perceived by regular education teachers and special education teachers in Saudi Arabia. He surveyed 278 teachers; 167 of them were teachers of the deaf, whereas the others were regular education teachers who had deaf students in their classes. The study revealed several interesting points. First, regular education teachers had more positive attitudes toward inclusion than deaf education teachers did, and the former thought that deaf students should be placed in general classes with their hearing peers, while teachers with deaf education backgrounds had less faith in inclusion. Second, school equipment and teacher qualifications were the first priorities to ensure effective inclusion, while students' abilities and family involvement were not a particularly urgent area of concern. Third, teachers with deaf education training were more informed and aware about the essential requirements for inclusion than regular education teachers because of their training and experience working with deaf students. Fourth, classrooms needed more preparations before they can become appropriate environments for deaf students. Last, teachers with a deaf education background thought the best place for hard of hearing students was in regular classrooms with assistance from special education teachers, whereas they thought the best place for deaf students was in a self-contained class in the regular
schools. When the participants were asked to rank the best placement option for deaf students, they ranked a self-contained class in a regular school as the first option, followed by special schools for the Deaf; the regular classroom was their last choice. AlShahrani (2014) used a mixed method (qualitative and quantitative) study to examine the attitudes of 120 Saudi educators toward the inclusion of D/hh students in regular schools in Jeddah. The results indicated that the participants held positive attitudes toward including hard of hearing students in regular schools but less favorable attitudes for including deaf students. The majority of participants considered special institutions for the deaf to be the best educational setting for these deaf students. The researcher also interviewed five teachers and six administrators. They emphasized their lack of training, especially in communication methods and sign language with D/hh students. Finally, Alzaid (2012) conducted a case study in which she interviewed six teachers from the same elementary school that offered an inclusive setting for the D/hh students in the city of Riyadh. The researcher concluded that the participants generally were supportive of the principles of inclusion, but they expressed strong feelings that the training of the school personnel was inadequate and that they needed more resources in order to include D/hh students successfully. The results from female educators were highly consistent with the results of male educators in AlShahrani’s (2014) study.

The inconsistency of the findings of these few studies that investigated the attitudes of schools’ personnel in Saudi Arabia toward the inclusion of deaf and hard of hearing students indicates a problem that requires further research. It seems that educators in Saudi Arabia perceive that inclusion means a part-time integration in the local regular school instead of the real meaning of inclusion that promotes full participation, a sense of belonging, and active engagement in all social and academic activities at the school. The current research attempted to
explore an important aspect of the complex and multidimensional process of full inclusion of D/hh students in regular education schools.

**Purpose of the Study**

The purpose of the current study was to investigate teachers’ attitudes towards teaching D/hh students in regular education classrooms in Saudi Arabia. In addition to assessing the overall attitude of teachers towards including D/hh students in regular classrooms, the study also examined the impact of six independent variables on the teachers’ attitudes. These variables are the teaching position, which refers to whether the respondent is a special education teacher or a regular education teacher; training on inclusion concepts and practices the teachers had either before or during their teaching; years of teaching experience in inclusive settings; teachers’ gender; prior experience teaching students with disabilities; and having a family member with a disability.

**Research Questions**

The current research attempted to address the following questions:

1) What are the overall attitudes of Saudi regular and special education teachers towards including D/hh students in regular education classrooms?

2) Are there differences in the teachers’ attitudes based on their years of teaching experience?

3) Are there differences in the teachers’ attitudes based on the training they may or may not have received on inclusion before or during their service?

4) Are there differences between the attitudes of female teachers versus male teachers?
5) Are there differences between the attitudes of teachers who have a family member with disabilities and teachers who do not?

6) Are there differences in the teachers’ attitudes based on whether they have previously worked with a student with disability?

7) Are there differences between the attitudes of regular education teachers and special education teachers?

**Research Hypotheses**

Based on the research questions, the study examined the following hypotheses:

- Null hypothesis 1: There are no statistical differences in the teachers’ attitudes based on their years of experience.

- Null hypothesis 2: There are no statistical differences in the teachers’ attitudes based on the training they may or may not have received on inclusion before or during their service.

- Null hypothesis 3: There are no statistical differences between the attitudes of female teachers and male teachers.

- Null hypothesis 4: There are no statistical differences between the attitudes of teachers who have a family member with a disability and teachers who do not.

- Null hypothesis 5: There are no statistical differences in the teachers’ attitudes based on whether they have worked before with a student with disability or not.

- Null hypothesis 6: There are no statistical differences between the attitudes of regular education teachers and special education teachers.
Significance of the Study

The Ministry of Education in Saudi Arabia is rapidly expanding the inclusive settings programs, official reports indicate that more D/hh students are leaving segregated schools for regular schools. The Ministry of Education introduced a new term, “Comprehensive Learning,” which attempts to implement full inclusion for all students with disabilities in Saudi Arabia. This trend made the role of segregated schools and special institutions ambiguous. On one hand, special schools for the Deaf can be turned into evaluation centers, which provide professional development workshops, conduct sophisticated hearing and psychological tests, offer hearing aid technology, and support research efforts in the area of hearing impairment. On the other hand, even with the increasing number of inclusive classrooms, special facilities for the D/hh should always remain open and accept students. Inclusive settings can be viewed as a part of the continuum of placement that also includes segregated schools, especially for Deaf community, which shares similar values and language.

Aside from the role of special institutions, the inclusion process is still limited since most of the inclusive programs are actually self-contained classrooms in regular schools (Ministry of Education, 2013). The voice of teachers who are qualified to teach D/hh students and who work with them on a day by day basis is missing from the equation. Unfortunately, few studies have investigated teachers’ perceptions toward the implementation of inclusion with regard to D/hh students in Saudi Arabia. The most comprehensive study was a national one (Al-Mousa et al., 2008) that painted a promising picture, which many educators in the field of Deaf education consider far from reality. Other studies (AlShahrani, 2014; Alzaid, 2012; Hanafe, 2008) revealed contradictory results. It seems that researchers in Saudi Arabia do not have a clear understanding of how regular education teachers and D/hh education teachers view the philosophy and
implementation of inclusion. Therefore, the current study is important and is different for a few reasons. First, it may help researchers, educators, and policy makers to understand the teachers’ attitudes toward the full inclusion of D/HH students in regular schools given the Saudi social context. Full inclusion was not widely practiced in Saudi Arabia. Therefore, previous literature that investigated teachers’ attitudes toward inclusion in Saudi Arabia might actually discussed the partial inclusion not the full inclusion where all Deaf and hard of hearing students attend the regular classroom alongside their peers without disabilities. Second, the study employed a valid and reliable instrument that has been used numerous times worldwide, which has helped to narrow the gap between the results of previous research and may explain some of the inconsistencies. Third, it provided an informed perspective and insight that may help in reforming and improving the process of including D/HH students in regular classrooms to move it from partial inclusion to full inclusion. Fourth, it could contribute to the literature by adding more evidence to the few existing studies with regard to D/HH students in Saudi Arabia. Last, it may encourage researchers to replicate this study to validate its results, or conduct further investigations to explore different factors that may influence the teachers’ attitudes both positively or negatively.

**Definitions and Terminology**

It is fundamental for any researcher to provide operational definitions of the key terms and concepts of the research to assist the reader in having a clear understanding of the subject under investigation. The following definitions might clarify the major concepts in the current research.

**Attitudes:** According to the *Oxford Advanced Learner’s Dictionary* (2015), “attitude” refers to the way a person sees, views, feels, thinks, or behaves toward an object or a situation. Although
there is a slight distinction between attitudes and perceptions, the current research used the two terms interchangeably to refer to the way teachers think and feel about teaching students with hearing loss in the regular classrooms with their hearing peers.

**Inclusion:** The term “Damj” or "دمج" is the equivalent to “inclusion” in the Arabic language. It is very common to find the term “mainstreaming” in the Arabic literature to describe the process of placing students with disabilities in regular schools. There is no Arabic word for “mainstreaming”; hence, many Arab and Saudi researchers use the two terms “inclusion and mainstreaming” interchangeably. The current researcher used the term “inclusion” to refer to the process of teaching D/hh students the fundamental curriculum in the regular education classroom alongside their hearing peers for most of the school day. This definition is adopted from the definition of Hallahan et al. (2009).

**Regular education teachers:** These are teachers who have a bachelor’s degree or higher in one of the academic subjects and teach a regular curriculum in the regular classrooms.

**Regular schools:** Regular schools are the local public school that students without disabilities attend.

**Regular curriculum:** The regular curriculum is the one that all students without disabilities learn in school.

**Deaf:** The capital D refers to the Deaf identity or community that shares the same culture and use sign language as its primary mode of communication (Moores, 2001).

**The deaf:** The small d refers to the condition of individuals with hearing loss and with no association with the Deaf community or culture. The researcher used the term “deaf” to describe individuals who are severely to profoundly deaf, which means their hearing loss is 70 decibels or
higher with or without hearing aids, and they do not acquire or use spoken language as a mode of communication (Marschark & Hauser, 2012).

**Hard of hearing:** This term defers to individuals with mild to severe hearing loss but they use residual hearing with or without hearing aids to learn spoken language and use it as their primary mode of communication (Moores, 2001). The term “deaf and hard of hearing” is the official term that is used in Saudi Arabia to refer to people with a hearing disability, and thus the researcher used it.

**Teachers of deaf education:** Refers to teachers who have a bachelor degree or higher in special education, specializing in teaching D/hh students.

**Special schools for the deaf:** This term refers to segregated schools that are designed specifically for D/hh students. Only students with hearing loss may attend these schools.

**Assumptions and Limitations**

The current research included several assumptions and limitations that should be mentioned. First, the researcher employed an online survey in which teachers’ responses could not be controlled; hence it was simply assumed that the teachers who participated in the study completed the survey with the most honesty and accuracy. Second, since the full inclusion of D/hh students is not currently widely implemented in Saudi Arabia, the researcher assumed that only a very limited number of teachers of D/hh students had actual experience with full inclusion, as well as a limited number of regular education teachers who taught D/hh students. Therefore, the researcher assumed that the sample represented the population from which it was drawn. Third, the number of resources and studies that investigated teachers’ attitudes toward inclusion, in general and with regard to D/hh students in particular, in Saudi Arabia and Arab
countries were relatively limited. Therefore, most of the literature reviewed in this research was conducted in western countries. Lastly, the scope of the present study covered the attitudes of teachers toward teaching D/hh students in regular classrooms in Saudi Arabia. Therefore, the findings cannot be generalized to other categories of disabilities.

Summary

This chapter introduced the topic under investigation. It demonstrated how inclusion has become the new trend in special education, as many countries around the world have begun to place students with disabilities in regular classrooms. However, not all educators are content with this transition from traditional special education programs to inclusive settings. Inclusion is still considered very controversial in the eyes of many educators, and it is even more complex for D/hh students. In addition, teachers are professionals who have the most contact with students with special needs, yet their valuable experience is often overlooked when policy makers introduce new laws. The research that has investigated how teachers of D/hh students view the transition to full inclusion in Saudi Arabia is very limited; therefore, this study used a descriptive design to attempt to explore the issue and fill an important part of this gap.
CHAPTER 2

REVIEW OF LITERATURE

This chapter presents a literature review related to teachers’ perceptions toward including students with disabilities in regular classrooms. The review is divided into three major sections. The first section addresses the study settings. Which includes a general overview of Saudi Arabia’s educational system, special education services and the current state of Deaf Education. The second section addresses inclusion, its development as a concept, and the rationale behind that development, concluding with inclusion’s goals and benefits. The last section addresses teachers’ attitudes towards inclusion, issues related to their attitudes and, finally, factors that may influence teachers’ attitudes towards inclusion.

Education in Saudi Arabia: Background

Saudi Arabia is the largest country (approximately 2,250,000 square kilometers/ 868,729 square miles) in the Arabian Peninsula of Southwest Asia. Saudi Arabia is at the crossroads of Europe, Asia, and Africa, extending from the Red Sea in the west to the Arabian (or Persian) Gulf in the east. Jordan, Iraq, and Kuwait are to the north, Yemen and Oman are to the south, and the United Arab Emirates, Bahrain, and Qatar are to the east of Saudi Arabia. King Abdul Aziz Al-Saud founded the modern Saudi Arabia in 1932. Before 1932, Saudi Arabia consisted of several regions, and certain tribes ruled each region. King Abdul Aziz Al-Saud unified these tribes under one nation, Kingdom of Saudi Arabia (Royal Embassy of Saudi Arabia, 2015).

The most recent census published by the Central Department of Statistics and Information (2010) indicated that the population of Saudi Arabia was 27 million, including 8.5 million non-Saudi international workers. The official language of Saudi Arabia is Arabic, and the
second official language is English. Saudi Arabia’s official religion is Islam, and the constitution is based on the Holy Quran. The government is an absolute monarchy, a council of ministers and a consultative council. There are 23 government ministries, one of which is designated for education. The Saudi government provides free health care for everyone, and free education from preschool through higher education. To encourage Saudis to attend college, the government provides them with monthly stipend. Besides public services, the private sector (schools and hospitals) provides paid services. The workweek in Saudi Arabia is Sunday through Thursday, and the weekend is Friday and Saturday (Royal Embassy of Saudi Arabia, 2015).

From a religious point of view, education is considered an urgent need for all human beings. Therefore, education in Saudi Arabia was a priority from the moment the country was established. The first formal educational system in Saudi Arabia was introduced in 1925, years before King Abdul Aziz Al-Saud officially declared Saudi Arabia as an independent country. Education in Saudi Arabia grew rapidly, leading the government to upgrade the Directorate of Education to a Ministry of Education in 1953 (Ministry of Education, 2014). The Ministry of Education (2014) noted that the primary goal of education policy in Saudi Arabia was “to provide education that is more efficient to meet the religious, economic and societal needs of the country and to eliminate illiteracy among Saudi adults.” The Ministry of Education plans or sets core standards for the country’s educational system and supervises special education services for students with disabilities.

Since the Saudi government firmly believes in the importance of education, it offers educational services free of charge to everyone. However, the Ministry of Education also gives permission to private schools to provide educational services. Public schools and private schools deliver the same curriculum. Private schools do not receive government funding, and, thus, they
request tuition fees. With those fees, they try to provide more learning opportunities to enrolled students. For instance, they teach English beginning in the first grade, but English is not taught in public schools until the fourth grade. The cost of enrollment in private schools varies from school to school, although they all must adhere to the regulations of the Ministry of Education.

Education in Saudi Arabia is offered at four levels: (1) one year of kindergarten (for children ages 4-5 years), (2) six years of elementary school (for students ages 6-12 years), (3) three years of intermediate school (ages 13-15 years), and (4) three years of high school (ages 16-18 years) (Ministry of Education, 2014).

The Saudi educational system is unique in several ways:

A) Females and males are educated separately (no coed schools).

B) The curriculum is based on Islamic teaching, with great emphasis on religious studies and Arabic language.

C) Students determine their own paths after the first year of high school. Students may choose either human studies and art or applied science. This choice directly affects their future because when they leave high school, they will pursue higher education in the same area they selected in high school.

The Saudi government decided to combine the Ministry of Education with the Ministry of Higher Education. Students who graduate from high school may choose one of these three options:

1- Universities and colleges: There are 25 public universities and about 25 private colleges in Saudi Arabia. These colleges offer bachelor’s degree in numerous majors. The length of each degree varies from four to seven years.
2- Vocational training: The Technical and Vocational Training Corporation was founded in 1980 to offer training to the Saudi students to enable them to enter the labor market. Training courses last two to three years and grant the students certificates in different fields, including computer technology, tourism, medical technology, environmental science, nutrition, telecommunication, and electronics.

3- Adult education: This option is offered to people who already have jobs but who want to pursue higher education (Ministry of Education, 2014).

Higher education in Saudi Arabia has advanced significantly in the last 15 years. Recently, higher education has received enormous support from the government, which led to the establishment of many new universities in a short period. For instance, the number of public universities increased from eight in 1999 to twenty five in 2014 (Ministry of Education, 2014).

**Special Education in Saudi Arabia**

Special education began in Saudi Arabia in 1958. Before that time, the family had the entire responsibility for providing education to their children with disabilities. An organized effort of educating people with disabilities started when Sheikh Al-Ganem, who was blind, learned the Braille reading system from an Iraqi man who was visiting Saudi Arabia. Al-Ganem told a few other blind friends who were attending a regular school about this new way of learning. Eventually, the government supported this private effort, two years later, the success led to the establishment of the first school for the blind in 1960, and students with vision impairment were able to enroll in schools that were specifically designed for them (Al-Mousa, 1999).
In 1962, the Ministry of Education founded the department of special learning and rehabilitation services in three main categories of disabilities: vision impairment (or blindness), deafness, and mental retardation. After this initiative, in 1964, another three schools for the blind opened in Mecca, Aneaza, and Alhofouf. The first school for the deaf opened in 1964. In 1974, the Ministry of Education passed a resolution to upgrade the department of special education to the general directorate, which meant that a small section of the Ministry of Education became a large separate entity that provided services for students with disabilities (Al-Mousa, 1999).

The rapid improvement in the services provided for individuals with disabilities was evident in the huge expansion in special education programs. The most recent statistics issued by the General Administration of Special Education at the Ministry of Education (2013) indicated that there were 8,449 programs with 9,428 special education teachers that served 38,300 male students with special needs in the school year 2013. These programs ranged from segregated institutions for students with special needs (79 schools), self-contained classes in regular schools (2,741 classrooms), inclusive classrooms (5,602 regular classrooms), and 27 centers for related services. With regard to female students, the most recent data the investigator could locate were published in 2012 and it shows there were 2,837 programs with 2,064 female special education teachers that served 14,504 female students with special needs (General Administration of Special Education, 2012).

Given the status of people with disabilities in Saudi Arabia, it was necessary to establish mandates and laws that reserve the rights for people with disabilities to receive education and essential assistance that met their needs for living an independent, decent life. In December 2000, the Provision Code for Persons with Disabilities was enacted in response to the collaborative efforts of several public agencies, including the Ministry of Education, the Ministry
of Health, the Ministry of Work, the Ministry of Social Affairs, and a number of other public organizations. The Provision Code for Persons with Disabilities is the primary and most comprehensive disability law in Saudi Arabia. It contains 16 articles to ensure that people with disabilities have access to free and appropriate medical, psychological, social, and educational services through public agencies. Moreover, this law requires those agencies to assist eligible people in all aspects of life, such as welfare, health, work, training, and rehabilitation. This Disability Code also gave privileges to employers who hire people with disabilities, thereby creating plenty of job opportunities (Al-Mousa, 2010).

In addition to the Provision Code for Persons with Disabilities, the Work Code, published by the Ministry of Work and last updated in 2014, contained an entire chapter for individuals with disabilities. Article 28 of the second chapter states, “Every employer or business that has 25 employees or more must have at least 4% of the total employees from people with disabilities.” The employers must report the jobs provided to people with disabilities to the Ministry of Work and seek assistance when they cannot find qualified people with disabilities to occupy these jobs (Ministry of Work, 2014).

Additional legislation addresses the needs of people with disabilities. Alquraini (2011) has mentioned two laws:

• Legislation of Disabilities: Passed in 1987 as the first policy for people with disabilities in Saudi Arabia, it included significant items that ensure they have the same rights as everyone else. It also defined disabilities and described programs, interventions, and procedures for diagnosis and for determining eligibility.
• Regulations of Special Education Programs and Institute (RSEPI): A collaborative effort between the Directorate General of Special Education and Special Education at King Saud University, it resulted in modification of the existing policy and programs. The Saudi policies are derived from those in the US, and thus with the new Individuals with Disabilities Education Improvement Act (IDEIA) 2004 changes, the Saudis reviewed these changes and made necessary modifications.

**Deaf Education in Saudi Arabia**

Deaf Education in Saudi Arabia has made significant strides since the first school for the deaf that was founded in 1964. Currently, several educational settings serve D/hh students:

1- Segregated schools for the deaf, which accept only profoundly deaf students; since there are no coed schools, segregation here refers to the schools that include only deaf students, without any interaction with the hearing students

2- Self-contained classrooms in the regular schools with partial inclusion.

3- Inclusive schools, which are regular schools that accept D/hh students; services can be provided via full inclusion in the regular classroom or in the resource room.

The recent data indicate that the number of D/hh male students was 4,659 students enrolled in 1,025 programs and taught by 2,544 teachers. The majority of these programs were self-contained classroom in regular schools (General Administration of Special Education, 2013). With regard to D/hh female students, the number of students in 2012 was 2,605 students enrolled in 510 classrooms and taught by 477 teachers (Deaf Education Department, 2012). These numbers included both profoundly D/hh students. According to the Saudi census, there are about five million school-age children in Saudi Arabia (Central Department of Statistics &
Information, 2013). There is no official number of deaf or hard of hearing Saudi individuals under age 18, which makes it hard to determine the ratio of D/hh students being served versus those who are not being served. Nonetheless, the numbers of 4,659 male students (2013) and 2,605 female students (2012) seem very small compared to the total number of school-age Saudi children. Moreover, the number of male students and their programs is almost double the number of female students.

Typically, the D/hh students who are enrolled in educational settings study the same general curriculum as their hearing peers. A two-year foundation course that includes early intervention and support services prepares D/hh students for general curriculum and the public school environment. This course is provided in the schools for the Deaf by teachers who are trained to work with deaf students and can communicate through sign language. During the foundation course, the students learn the basic skills and concepts essential for the next stage. In the first year, they learn concepts about home, family, school, and transportation. In the second foundation year, they learn skills in areas like math, reading, writing, and religious practices. Once students complete this foundation courses, they can join regular schools. Nevertheless, students need to meet certain requirements to enroll in the deaf or hard of hearing programs, including hearing loss between 35-69 decibels in the better ear with a hearing aid, an IQ score of 75 or higher in the Wechsler test or an equivalent, no disabilities in addition to hearing loss, and completion of a team evaluation to determine their needs (Deaf Education Department, 2012).

D/hh students who attend special schools for the Deaf in Saudi Arabia typically go to Al-Amal institutes for the Deaf. These schools are special schools for D/hh students. The word (Amal) means (Hope). The first schools were open in 1964, one school for the male students, which had 16 students; the other for the girls with 25 students (Deaf Education Department,
The number of Al Amal institutions increased dramatically during the years and across the country. Currently there are 12 schools serving 461 boys, and 16 schools serving 1,170 girls (General Administration of Special Education, 2013; General Administration of Special Education, 2012). Most of the institutes provide accommodations such as accessible classrooms, quality furniture, assistive computer technology, listening devices, food, clothing, medical care, and recreational activities, especially for those students whose families live in other towns.

**Hearing Impairments**

Several definitions and methods define or categorize hearing loss as a condition, and numerous terms are used to describe it. For instance, it can be classified by which part of the auditory system is damaged, by the level of the loss in decibels (26-40 is mild, 71-90 is severe, and so on), or by the educational definition. The most important part of the classification of the hearing impairment is the distinction between profoundly D/hh (Hallahan et al., 2009). Therefore, individuals with hearing impairment are currently most known as “deaf and hard of hearing,” and this term was employed in the last reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) in the United States as well as in the Saudi special education policy. IDEIA defines D/hh as “a disability that, with or without amplification, adversely affects the student's ability to use hearing for developing language and learning, educational performance, and developmental progress.” The definition also includes permanent or temporary, mild to severe or profound, and unilateral or bilateral hearing loss, and those who have hearing loss may use either spoken language or sign language, and, in many cases, a combination of both languages. The definition is comprehensive, and includes all individuals who have any difficulty with their hearing, including those who use hearing aids or who underwent surgery to implant an artificial cochlea.
The definition above focuses on the academic and learning aspects more than on the medical aspects. It states that a deaf person would not be considered deaf unless the impairment adversely affects learning outcomes. Those who have temporary hearing loss and use spoken language to communicate are included in the hard of hearing special education category if their academic performance drops off due to their hearing difficulties. Students who meet these requirements will be eligible to receive special education services, which may include accommodations in school environments, medical treatment, interpreters, and modification in instruction, depending on each student’s needs and her/his Individualized Education Program (IEP).

Other common classifications of hearing impairment are congenitally deaf, adventitiously deaf, pre-lingual deafness, and post-lingual deafness. Congenitally deaf refers to babies born with severe hearing loss. Adventitiously deaf refers to those who acquire hearing loss after birth. Pre-lingual deafness refers to deafness that occurs before the person learns any language. Finally, post-lingual deafness means the individual developed language before the hearing loss (Hallahan et al., 2009).

A recent report (National Center for Education Statistics, 2012) showed that 97% of newborn babies in the United States were screened for hearing loss, and 1.6% of those who were screened did not pass the hearing test and were diagnosed with hearing impairment. The report also indicated that the percentage of D/hh people (1%) had not changed in the last decade, making it a low-incident disability.

**Overview of Inclusion**

Based on the available literature, inclusion as an educational concept does not have a specific agreed-upon definition (Odom & Diamond, 1998). For example, Frederickson and Cline
(2009) described inclusion as a journey or movement away from segregation, which means inclusion is a tool to counter or resist the prejudice, bias, and inequality in schools. Similarly, Evans (2007) discussed the complexity of finding one simple definition of inclusion because many terminologies and official definitions concerned the philosophy and practice of inclusion in British policies. Evans (2007) wrote that the most accurate way to define inclusion is to distinguish between what is inclusion and what is not. She argued that inclusion was about the quality of each individual’s experience in schools, which can be accomplished by recognizing different types of skills and abilities of each individual, providing opportunity for everyone to succeed, and creating an environment that respects all individuals and eliminates barriers that may hinder the learning process. In contrast, she claimed, inclusion was not buying software or sophisticated equipment and then never using them, or boasting of having specialists with certain qualifications but without a direct impact on students, or even treating all individuals in the same way. The significant element in Evans’s (2007) description was the word “individual,” which included children with and without disabilities, school personnel, and parents.

All definitions of inclusion reflect the same essence, which Hallahan et al. (2009) described: “All students with disabilities are placed in their neighborhood schools in regular education classrooms for the entire day; regular education teachers have the primary responsibility for students with disabilities” (p. 53).

Considering these definitions, it seems that inclusion is not a place or setting. Inclusion is a way of life, not only in schools but also in the larger community. The students are not considered fully included by only placing them in the general classroom with their peers. Instead, they need to have full and active participation in all activities, develop friendships with classmates and staff, enjoy a safe respected environment, and feel a sense of belonging.
Therefore, inclusive settings require everyone to take responsibility to provide effective full inclusion for students with special needs, and this starts at home (with the family), includes schools’ staff, and the ultimate focus is on students with or without disabilities.

**The Movement Toward Inclusion**

People with disabilities have existed since the beginning of time, however they were not always treated appropriately. The development of special education went through several stages, starting when philosophers, physicians, and religious leaders called on communities to protect, integrate, and accept people with disabilities. The 18th century marked the realization that all people can actually learn. When formal systematic education was introduced, terminologies used to describe the disabilities were also changed, and in fact the last four decades new strategies were created to help students with disabilities to learn (Hallahan et al., 2009; Osgood, 2005). When special education programs were initiated, educators believed such students had unique physical, emotional, and intellectual needs that required more attention from highly trained staff members who employed different approaches in teaching their students. Therefore, most professionals thought the best place for those students would be a separate classroom that contained only few students who shared similar characteristics and difficulties, taught by a qualified teacher who was experienced and capable to meet their unique needs. Most of these classrooms were either in different buildings or even in separate residential schools.

Nevertheless, it is critical to note that not all educators in the 1960s & 1970s shared the same thoughts about segregating students with disabilities from regular classrooms (Frederickson & Cline, 2009; Osgood, 2005).

Although this segregation was justified and attributed to the increase of special education that claimed to be in the best interests for the students, it raised concerns regarding the equality
and civil rights of the individuals with disabilities, which created a heated debate among researchers, educators, and policy makers (Frederickson & Cline, 2009; Osgood, 2005). In the 1950s and 1960s, there was a major political movement in the United States to promote the equality and civil rights of all people regardless of their race, faith, or culture. This movement was mainly against racial segregation, but it sparked parents and educators to advocate and fight for the rights of people with disabilities and to reject the segregation from their community. That movement also influenced the segregation versus inclusion discussion, which resulted in numerous educational reforms and policies that supported the inclusion of individuals with disabilities in regular education public schools. Laws such as Public Law 94-142 the Education for All Handicapped Children Act 1975, currently called the Individuals with Disabilities Education Improvement Act (IDEIA), the Rehabilitation Act 1973, and the American with Disabilities Act 1990 (ADA) were enacted in order to prevent discrimination, stop students’ exclusion from public schools, and improve the educational environment and related services provided to students with disabilities. The most crucial element of these laws was the provision of a free, appropriate public education for all children in the least restrictive environment (Osgood, 2005).

These policies endorsed the inclusion of students with disabilities in general education, which led to a significant change in the educational environment of students with disabilities. In other words, segregation was no longer considered the best practice for students with disabilities. Instead, inclusive settings were encouraged, regardless of the level or the type of disability. The law requires public entities to collect data and report the numbers of people who received special education benefits and related services annually.
A report that was published recently by U.S. Department of Education indicated that the number of students with disabilities who spent more than 80% of the school day in a regular classroom increased from less than 40% in 1990 to 60% in 2010. In contrast, the number of students with disabilities who spent 40-79% of their school day with their peers without disabilities decreased from 38% in 1990 to 20% in 2010. Similarly, the number of students with disabilities who spent less than 40% in regular education classrooms declined from 25% to 18% in the same period (National Center for Education Statistics, 2012).

**Rationale for Inclusion**

Teaching children with disabilities in regular classrooms with their peers without disabilities has generated much discussion. The proponents of inclusion believe that individuals with disabilities should not be excluded from their natural environment under any circumstances. In contrast, the opponents of inclusion think that the evidence from research does not favor a given placement option over the others, and hence inclusive settings are not necessarily the best learning environments for all students, which means, one size cannot fit all (AlMousa, 2010; Hallahan et al., 2009). Lipsky and Gartner (1997) summarized the key points that made many educators and researchers firmly to endorse inclusive settings as the first educational environment for children with special needs as follows: 1) Research data show that students with special needs can achieve adequate learning progress in regular classrooms as much as they can in separate classes. In addition, no conclusive research evidence indicates that students with special needs do better academically and socially in segregated programs. 2) Labels attached to segregated classes can be stigmatizing and adversely impact the learning process. 3) Regular education is able to provide appropriate learning opportunities to all students, including those with special needs, when it is conducted with clear scientific measures. 3) Research shows that
inclusive settings can also benefit students without disabilities in several ways, such as teaching them about human differences, increasing their social acceptance to others, developing their morals and values, and increasing their self-concept. 4) Inclusive settings can be cost-effective and help in enhancing the quality of education for all students with or without disabilities. They also enrich teaching experiences for both general and special education teachers and increase their collaboration and professional development. 5) The majority of research that investigated the attitude of administrators, teachers, parents, schools personnel, and peers toward inclusion and its outcomes generally showed positive results. And 6) Segregated programs failed to prepare individuals with disabilities for full involvement in all aspects of life and thus raise serious concerns about the effectiveness of such programs.

The Academic Outcomes of Inclusion

The positive academic outcomes of inclusion have been reported in countless studies over the years, across different countries, and types of disabilities. These studies showed that teaching students with disabilities, regardless of the types and severity of their disabilities, in regular classrooms resulted in academic progress. Dessemontet, Bless, and Morin (2012) investigated the effects of inclusion by comparing the progress of two groups of students with intellectual disabilities. Each group had 34 students: one group was fully included in a general classroom with additional aid, and the second group received instruction in segregated schools. The 68 students had similar characteristics (age, IQ score, and no other disability). The first group attended regular schools in their neighborhoods and received four to six hours of weekly support via special education teachers or speech therapy. The second group was the control group, and they went to special schools, were placed in special classes with 5-8 students with intellectual disabilities, and were taught by special education teachers and assistants. The
researchers employed academic achievement tests to measure the academic progress within two school years. The findings of this quasi-experimental study showed that the students who were taught in regular classrooms made statistically slightly higher academic progress than their counterparts did in the self-contained classes. The difference between the two groups was noted in the literacy skills, but there was no difference in the math scores.

These findings were consistent with those of Daniel and King (1997), who studied the impact of inclusion on four variables: parental concern about their children’s program, behavior problems, academic performance, and students’ self-esteem. Daniel and King (1997) compared the academic scores of two groups of third, fourth, and fifth graders who attended both inclusive and segregated settings. They found that students in inclusive settings were more likely to achieve higher scores in reading skills but had no significant differences in math, language, and spelling. This finding led them to conclude that the results are inconsistent and explain that the increase in behavior problems may make teachers spend more time on discipline rather than on instruction. It is noteworthy that the two studies followed very similar steps to conduct their investigation. Daniel and King (1997) did not state the type of disability in their research and found very similar results, and yet the two studies had extremely different conclusions. Dessemontet et al. (2012) concluded their finding was promising and supports inclusive settings, but Daniel and King (1997) thought their results were inconsistent and did not reflect a significant positive impact of inclusion on the students with disabilities. This difference in the studies’ conclusions indicates the massive role that the attitudes and beliefs of given researchers play in interpreting their results and drawing their conclusions.

Similarly, Cole, Waldron, and Majd (2004) conducted a large comparative study to examine the effects of inclusive settings on the academic performance of students with mild
disabilities in regular schools, students with mild disabilities in special education programs, students without disabilities in inclusive settings, and students without disabilities in non-inclusive settings. The authors controlled for the other variables including, ethnicity, student population, free lunch, age, gender, grade, and types of disabilities. The sample size was 429 students with mild disabilities and 606 students without disabilities. Nearly half of the students in the sample attended inclusive settings. The results did not show a significant difference between the reading and math scores of students with disabilities in both settings. However, after reviewing the pre- and post-test scores for all groups, one can see that students with disabilities made greater progress in inclusive settings. The mean of math pre-test of the students who attended inclusive settings was 9.69, and the mean of their math post-test increased to 13.41. In contrast, students who attended special education program got 11.01 as average in the math pre-test and increased to 13.65 in the post-test. The same occurred in the reading pre-test and post-test scores as the first group in the inclusive classes increased their mean score from 9.18 to 14.11, whereas their counterparts in the special education programs increased the mean scores from 11.23 to 14.07. These results could indicate that, even though the baseline of students with disabilities in special education programs was higher they made less academic progress during the year than did their counterparts in inclusive settings. The researchers also reported other benefits for students without disabilities, which will be discussed later in another section (Cole et al., 2004).

Rea, Mclaughlin and Walther-Thomas (2002) examined the academic and behavior progress of students with Learning Disabilities (LD) in the inclusive settings versus in pullout programs. The sample included 36 students with LD who received special education services in the general classroom and 22 students with LD who received special education services through
the resource room. The researchers established comparability between the two groups to ensure that any differences in the results could be attributed to the environment. The findings clearly indicated that students in the inclusive settings achieved higher grades in all subjects (reading, math, science, and social studies), did better on the standardized tests, had greater attendance rates, and exhibited fewer behavior problems. More importantly Rea et al. (2002) in their data analysis, noted that the performance expectations written in the Individualized Education Plans (IEPs) of the students in the inclusive settings were higher than those written in the IEPs of students in the pullout settings.

Educators and researchers who argue against inclusion build their argument on two factors. The first is that the foundation of special education suggests there are students with disabilities that their needs cannot be met in regular classrooms and hence should be placed in separate classes with different instructions to meet their needs. The second point of the argument is that inclusion is a moral and ethical decision, but there is no solid research evidence that supports its effectiveness in improving the academic and social outcomes of students with disabilities. However, the empirical studies reported here undermine these two points. These well-controlled studies showed that students with disabilities could make the same academic progress—if not more—in the inclusive settings as they did in separated classes. Furthermore, Falvey (2004) could not find a single study during a period of 20 years (1984-2004) that suggests providing special education services for students with severe disabilities in segregated settings is better or more effective than providing it in regular classrooms. The research evidence reveals that where students learn is not important, but how and what students learn is the critical key to academic success.
The inclusive settings offer several elements that may increase the academic learning of students with disabilities. For example, Helmhstetter, Curry, Brennan and Sampson-Saul (1998) observed nine students with severe disabilities in two different settings (inclusive and segregated classes), and they found that the regular classrooms provided significantly more instruction time for the students than did the special classes. In addition, when the students with disabilities needed intensive instruction, the regular classrooms provided one-to-one instruction to the students in similar amount compared to what was offered in segregated classes. However, the findings also revealed that students with disabilities were less engaged in the general class activities than their peers without disabilities. Another study (McDonnell, Thorson, & McQuivey, 2000) indicated that students with severe disabilities were 13 times more likely to receive instruction that was focused on them than their typical peers and 23 times more likely to receive one-to-one instruction. This finding shows that students with disabilities can receive intensive instruction in the general classroom, which negates the thought that regular classrooms cannot meet the academic needs of students with disabilities.

Fisher, Shumaker, and Deshler (1995) analyzed the literature that studied inclusive practices between 1980 and 1995. They selected the articles that met the following criteria: research must be executed in regular classrooms that include students with disabilities, the findings must report the academic performance of students with mild or severe disabilities, and the study must use an experimental design that controls for all variables. The findings indicated that if regular education teachers employed evidence-based practices such as peer tutoring, cooperative learning, organizational routines, and study guides in their teaching methods, then academic performance across the subjects improves, including reading, spelling, math, and
science. The academic benefits of inclusion extend beyond schools, as it prepares students with disabilities for employment and independent living.

In sum, all of the studies reviewed above, which employed a wide range of methodologies, did not find any solid evidence that inclusion adversely impacts the academic performance of all students, regardless of their age, condition, or environment. This means if inclusion is not helping the students with disabilities it will not harm them with negative consequences, either.

**Social Outcomes of Inclusion**

The paramount goal of inclusion is to prepare students with disabilities for an independent life, which means that they learn the appropriate academic and social skills. Thus, social skills are crucial desired outcomes of the inclusion. Similar to academic benefits, the empirical data reveal that inclusive settings significantly assist students with disabilities to acquire new life-long social skills. In a longitudinal study, Cole and Meyer (1991) examined the improvement of social skills of students with severe disabilities (intellectual disabilities and multiple disabilities) over a two-year period. Among these students, 55 attended segregated schools and 36 attended inclusive schools. The findings indicated students in the inclusive settings made progress on the social competence measure, whereas their counterparts in segregated schools showed a decline on the same measure. They also engaged more in community-based programs that maximized their opportunity to learn social and life skills in the natural environment, and they demonstrated personal preference and better responses in social situations, accepted assistance from others, and provided feedback to others. Moreover, students who attended inclusive settings spent the same amount of time with the special education teachers that their counterparts spent in special schools, and they made similar progress in
domains like gross and fine motor coordination, communication skills, and self-help skills. In a similar study, Fisher and Meyer (2002) compared two groups of students with severe disabilities in two different settings (inclusive vs. self-contained class) over a two-year period. The assessment of social competence and scale of independent behavior revealed that students in the inclusive settings made greater growth on both measures than did students in the self-contained class. Similarly, Kennedy, Shukla, and Fryxell (1997) compared two groups of middle school students with severe disabilities who attended general and special schools over a year. They found that the students in the regular schools had higher levels of social interactions with their peers without disabilities as well as with the school personnel, received further social behavior support, and created more friendship networks compared to students in the special schools. The same results were reported in earlier comparative studies (e.g., Brinker & Thorpe, 1984; Fryxell & Kennedy, 1995).

A case study conducted on two elementary students with autism and two or three of their typically developing classmates showed that when the latter are trained to initiate interactions with the students with disabilities during regular class activities, the initiation and response rate will greatly increase and there will be significant improvement in the social skills in both groups (Banada, Hart, & Liu-Gitz, 2010). Logan et al. (1998) examined the types of behaviors and levels of happiness shown by five students with severe disabilities when they interacted with typically developing peers versus students with similar disabilities. The results revealed the five students demonstrated higher level of happiness when their typical peers were present. The researchers concluded that students without disabilities provided a different type and quality of interaction that stimulated students with disabilities and brought them more enjoyment. For example, typical students could help their classmates with disabilities to go swing on the
playground, whereas this high advanced playing could be harder for two students with severe disabilities.

Another study (Foreman, Arthur-Kelly, Pascoe, & Smyth-King, 2004) observed and recorded the behavioral states and communicative interactions of eight matched pairs of students with severe and multiple disabilities for a full day in inclusive and segregated settings. The behavioral state is the measure of students’ functional level of engagement in a certain moment, including “Asleep-Active, Drowsy, Daze, and Awake-Active.” The comparison of the two settings showed that that students with severe and multiple disabilities demonstrated more desired behavioral states and made greater communicative interactions in the general classes than they did in segregated classes. The state of “no communication” was significantly lower in general classes than in the special classes. The researchers explained the differences as students in general classes had a para-educator and engaged in peer-activity that increased the opportunity for more interaction and better behavioral states, whereas the teacher was the primary source of interaction in the special class, without additional resources, which resulted in lower amounts of interaction and desired behavioral states.

In summary, the literature confirms that inclusion promotes the development of social competence of students with disabilities in many ways. First, young children acquire appropriate behavior and skills from their natural interaction with adults and peers. Inclusive settings offer the opportunity to children with disabilities to have that natural interaction and boost their meaningful engagement. Second, children need a role model in their environment so they can observe, distinguish, imitate, and generalize the adequate behaviors. The role model does not have to be an adult. Peers develop sophisticated social and emotional skills and thus can be very good role models for children with disabilities. The inclusive class also provides a variety of
situations that facilitate the learning of a wide range of skills and behaviors. Third, since the
general classroom is the natural placement for all students, inclusion will reduce the
stigmatization and labeling issues that are associated with special classes. Students in pull-out
programs tend to feel ashamed of their disability, and their peers ridicule them. In contrast,
placing all students in the same class to do the same activity will minimize the negative feelings
and enhance the relationships between all students, which results in better social and emotional
development. Fourth, friendship is a key aspect of social outcomes, and inclusion encourages
students with and without disabilities to build genuine friendship that satisfies both parties and
helps them to have a great experience of companionship. Finally, inclusion raises school
awareness in relation to disabilities. Students and school staff who work in inclusive settings
tend to show positive attitudes towards students with disabilities. They become more accepting
and understanding of the social and emotional needs of students with disabilities. At the same
time, students with disabilities will learn more about individual differences, which increases their
positive feelings about themselves and others.

**Positive Outcomes for Students Without Disabilities**

Downing (2008) stated that one of the critical points in the argument against inclusion is
that placing students with disabilities in regular classrooms with their typically developing peers
will result in negative consequences and worsen the latter’s academic and social development.
However, the literature reported overwhelming evidence indicating that inclusion, in fact,
benefits students without disabilities as well as those with special needs. Cole et al. (2004)
compared the academic performance of students without disabilities in math and reading in two
different settings. Half of the sample received instructions in inclusive classes that contained
students with disabilities; the other half did not have any students with special needs at
instruction time. The findings showed that the students without disabilities who were taught in inclusive settings made significantly greater academic progress in both subjects than did those who attended non-inclusive settings. The researchers attributed the difference in academic performance to the additional resources available in the inclusive settings. Students without disabilities make more academic progress in inclusive schools than they do in non-inclusive ones, as many studies (e.g., Fisher & Sax, 2000; Saint-Laurent et al., 1998) have shown. In addition, Sharpe, York, and Knight (1994) made the same comparison by employing pre-test and post-test design, and they found no difference in the academic performance of students without disabilities when they were taught in inclusive and non-inclusive settings. The researchers also followed the scores of participants for three academic years and did not see any decline in their academic scores, even when they had classmates with special needs. The authors concluded that these findings eliminate any concerns that school administrators, teachers, and parents may have with regard to the negative impact of inclusion on the learning process of students without disabilities.

Peck, Staub, Gallucci, and Schwarzt (2004) collected information about the inclusion effects from 389 parents of typically developing students aged 5-12 years who had at least one student with moderate to severe disability in their class. The parents were asked to answer a survey and add their comments. Most of the answers and comments noted the positive social outcomes of inclusion. The vast majority (78%) of the participants said inclusion did not have a negative impact on their children’s academic progress. Fifteen percent of the sample said inclusion had a positive effect on their children’s academic progress. Only 7% reported negative effects on their children’s academic progress. Most of the negative comments were related to inappropriate behaviors and the disruption of the whole class. However, Hollowood, Salisbury,
Rainforth, and Palombaro (1995) utilized a causal-comparative design to examine the time allocated for instruction, degree, and types of students’ engagement and the level of interruption from the presence of students with mild to severe disabilities. Hollowood et al. (1995) observed an elementary school where six students with severe disabilities were included in four regular classrooms. The results showed the time allocated for instruction was not affected by the presence of students with disabilities in regular classrooms. The finding also revealed that students with disabilities were actively engaged at high levels comparable to their peers without disabilities. The results of this study showed that inclusive settings can deliver high quality and quantity of instruction time for all students, with and without disabilities.

Tapasak and Walther-Thomas (1999) aimed to evaluate an inclusive program in its first year of implementation. One of the measures used in the study was teachers’ reports about social skills and behavior problems demonstrated by students with and without disabilities in the classroom. The teachers’ ratings of the behavior problems shown by their students without disabilities revealed no differences between inclusive and non-inclusive settings. In other words, elementary students without disabilities did not display more behavior problems when they had classmates with disabilities.

The data support many social benefits of inclusion for students without disabilities. Students in inclusive schools tend to show more acceptance or understanding of diversity and more tolerance toward individual differences, resulting in greater acceptance of their classmates with disabilities and, eventually, increasing their probabilities of building relationships (Downing, Spencer, & Cavallaro, 2004). They also learn new strategies to communicate with their peers (Gelston, 2004). The benefits of inclusion were also reported by the students themselves, as they stated the experience of having classmates with disabilities helped them to
improve their knowledge, attitudes, and friendships and to recognize their strengths, self-confidence, and societal values (Copeland et al., 2004).

**An Argument Against Inclusion**

Opponents of inclusion acknowledge the significance of enrolling students with special needs in the Least Restrictive Environment (LRE), but they do not think regular classrooms are necessarily the appropriate place for everybody. Many educators and researchers claimed that placing students with disabilities in regular classrooms full time is an ethical decision that is mostly made on a moral and ethical basis rather than on scientific evidence. Hallahan et al. (2009) wrote, “Apparently, even if well controlled research shows that separate programs lead to better academic and social outcomes than do full-inclusion programs, these advocates would still favor full inclusion on ethical grounds” (p. 56). The opponents of inclusion emphasize the original premise of special education, which suggests that numerous students need additional resources, specially-designed curriculum, intensive instruction, and modified teaching strategies to achieve appropriate academic and social progress. These intensive and special services cannot be offered in the general classroom. Those who argue against inclusion assert that the place of learning should not be the central focus of special education but the services and instruction that meet the students’ complex needs. As a result, opponents of inclusion firmly believe that an inclusive setting is merely one part of the continuum placement, and students with disabilities and their parents must have the ability to select the setting that meets their needs and best serves them educationally (Kauffman & Hallahan, 2005). To sum the argument, critics of inclusion build their argument on two major points. First, inclusion was promoted through ethical and ideological foundations, but it lacks strong evidence to support its effectiveness over other special education settings. Second, children with disabilities have specific characteristics that are
very different from other children, and, thus, teaching them the same curriculum via the same instructional methods is unfair and unrealistic (Kauffman & Hallahan, 2005).

The literature also had many studies that did not support the positive outcomes of inclusion. For instance, Gresham and MacMillan (1997) did a meta-analysis to examine empirical research related to the social competence and affective functioning of children with mild disabilities. The authors found that children with mild disabilities who attended inclusive settings were less accepted and more rejected by their peers without disabilities, the interaction between the two groups (children with and without disabilities) occurred infrequently, and most encounters were negative. As a result, children with disabilities placed in regular schools demonstrate poorer social skills than their counterparts who go to special settings.

Klingner, Vaughn, Schumm, Cohen and Forgan (1998) investigated the students’ perception and preference for inclusion versus resource rooms. Thirty-two elementary students were interviewed in this study. Half of the students had learning disabilities, whereas the other half did not have any disability. All participants had experienced both placement options under investigation, as the school used to provide special education programs via the resource room then shifted to an inclusive program where students never left the general classroom. The results of this study indicated that students who experienced both settings held different views, but the majority of them believed the pull-out program to be more beneficial and favored it over the inclusive one. This finding was consistent with an earlier study (Jenkins & Heinen, 1989) that followed the same methodology on a larger scale, interviewing 686 students with/without disabilities. The finding of this large study revealed that students’ preference of their service model is greatly affected by their experience, age, or grade level, and many students to tend to select pull-out programs to hide skills deficits or avoid embarrassment and stigma.
Vaughn and Klinger (1998) reviewed eight studies that had examined students with learning disabilities’ perceptions of their educational settings. Out of the eight studies, two studied high school students, and six studied elementary schools students. The review analysis showed five major results. 1) Most of the students with learning disabilities preferred to receive the special education services outside the general classroom for a part of the school day. 2) Most students preferred the resource room because they thought it was fun, easier, and helped them to do their work. 3) Students like inclusion because it helps them to make friends. 4) Most students appreciate the support they receive in the general classroom but do not know the teacher is a special education teacher. 5) Most students with special needs do not have much understanding of the educational settings.

In addition, a case study (Zigmond & Baker, 1994) observed a student with learning disability over two years: in a resource room in the first year, then in an inclusive classroom in the second year. The student did not show significant improvement in reading tests, and the researchers concluded that the inclusive classroom failed to meet the students’ special needs. In another study, Baker and Zigmond (1995) once again observed 10 students with learning disabilities in six inclusive school buildings, interviewed staff over ten school days, and concluded “We saw almost no specific, directed, individualized, intensive, remedial instruction of students who were clearly deficient academically and struggling with the schoolwork” (p. 178). The same strong criticism of special education practices offered to students with disabilities in the general classroom was found in other studies. For example, McIntosh, Vaughn, Schumm, Haager, and Lee (1993) observed the behaviors of 60 regular education teachers who had students with learning disabilities in their classes and concluded that only a few practices were different for students with and without special needs. Likewise, Ysseldke, Thurlow,
Wotruba, and Nania (1990) asked 197 regular education teachers about their instructional arrangements for their students with disabilities; the responses showed most of the teachers did not change their instructional methods and did not collaborate with assistants to meet the students’ learning needs. Similarly, Schumm and Vaughn (1995) reviewed the data of several studies that interviewed and surveyed more than 1000 teachers and 3000 students of all grades. The researchers found that teachers believed they did not receive adequate training and preparation to teach students with special needs and did not have the opportunity to collaborate with special education teachers; thus, schools were not ready for inclusion.

Espin, Deno, and Albayrak-Kaymak (1998) compared the IEPs of students with mild disabilities who received services in resource room and in an inclusive classroom. The rationale of this comparison was that an IEP is the plan that is designed to meet the individual needs of each student; hence, the better the IEP is designed, the better the service and outcomes will be, eventually determining which setting offers more appropriate services. The authors analyzed the major components of an IEP, including the number of minutes per week students received intervention, the number and details of long-term and short-term goals, and the sources of data related to student’s performance and needs. Their findings indicated that IEPs of students in the resource room had more minutes of intervention, more long-term goals, and more sources employed to collect student data. The researchers concluded the special education services became less special in the inclusive settings.

With regard to academic achievement, Manset and Semmel (1997) reviewed eight inclusive models for elementary students with mild disabilities. Each model was a school-wide intervention developed and implemented by researchers to demonstrate the appropriate approach to inclusive settings. The analysis indicated inconclusive and mixed results because it suggested
inclusive models helped some—but not all students—achieve academic benefits, and it also reinforced the importance of providing direct service through specialists. The authors concluded that there was no evidence that inclusive classrooms allowed greater academic gains for students with mild disabilities than did the pull-out programs, and most of the gains were made by students without disabilities. Zigmond et al. (1995) analyzed three inclusive programs and found the same fluctuation in the inclusive models’ outcomes. They concluded the academic outcomes were not desirable or encouraging, given the resources and knowledge that were invested in planning, training, technical assistance, and support to ensure the programs would succeed.

Farrell, Dyson, Hutcheson, Polat, and Gallannaugh (2007) analyzed students’ academic achievements and scores available in the National Pupil Database to examine the relationship between inclusion as a national practice and the students’ performances. Farrell et al. (2007) wanted to know whether inclusive schools academically do better or worse as a whole system and at the individual level. A part of the findings indicated a small negative relationship between inclusion and students’ achievements. The more the school included students with disabilities in regular classrooms, the lower were the achieved scores for both groups. Although small, the negative effect of inclusion was stronger for students without disabilities than for those with disabilities. Farrell et al. (2007) explained this result by stating that students’ achievements were independent of the level of inclusion, and other factors such as ethnicity, native language, and socio-economic status were more related to the lower scores. The researchers stressed that they did not compare students in inclusive settings to segregated ones, and, thus, their results should not be used in the argument for or against inclusion. Nonetheless, the study has been included in the present literature review on inclusion because it provides numeric data and statistical analysis of academic achievement of students in inclusive schools that showed negative relationships
between inclusion and students’ performance and raised red flags regarding the potential negative impact of inclusion.

Two major points in the literature against inclusion are notable. First, most, if not all, of the studies were outdated. Five or ten years mean huge strides and improvements, and the results of the research conducted in the 1990s can be very different than research conducted in 2015. Second, the same researchers, such as Zig mond, Baker, Klinger, Kauffman, Hallahan, Vaughn, Deno, and Fuchs, conducted most of the research against inclusion. These researchers expressed strong negative attitudes against inclusion, which raises alarms about the conclusions of their work. This literature review has made an attempt to present both sides of the arguments regarding the impacts of inclusion on students with and without disabilities.

**Inclusion for Deaf and Hard of Hearing Students**

With regard to D/hh students - the target population of the current study—the situations of inclusion and the least restrictive environment are very different and more complicated than with other disabilities. The D/hh students’ population is very diverse, and it is hard to find two deaf or hard of hearing students who share the same characteristics or needs. This diversity includes profoundly deaf vs. mild hearing loss, and the use of sign vs. spoken language. Even in the same sub-category, there are differences, such as deaf people who are fluent in sign language vs. deaf people who never get the opportunity to learn sign language.

Another crucial factor that makes inclusion complex is the fact that the Deaf population has a complete sign language and has created its own community. The Deaf community views itself as a cultural minority group within the larger community. Deaf people are very proud of their language and culture and strive to maintain it; therefore, they might perceive regular
education as destructive to their community. For instance, the American Society for Deaf Children (ASDC) and the National Association of the Deaf (NAD) have expressed strong opposition to any attempt to make regular classrooms the first placement option for D/hh students. These organizations who represent thousands of D/hh people, parents, professionals, and advocates explain that the regular classroom is not necessarily the best learning environment for D/hh students because it may fail to meet their unique communicative, linguistic, and social needs. As a result, the classroom becomes a place of exclusion instead of inclusion and most restrictive rather than least restrictive.

In contrast, schools for the deaf bring large numbers of D/hh children together in one place, along with D/hh adults, who become role models for the children. This community helps them to communicate successfully, learn Deaf culture, and gain social skills and a high level of language skills. Accordingly, by the definition of the law, special schools for the deaf could be the least restrictive environments for D/hh students because they meet the students’ social, communication, and academic needs, especially when the schools receive state support just like regular education schools for the general students (Cerney, 2007; Mahshie, 1995). In spite of the D/hh people’s opposition to inclusion, the strong push of the inclusion movement resulted in placing many D/hh students in regular schools. In the United States, for example, a report published by National Center for Education Statistics (NCES) in 2010 revealed that, out of 79,000 D/hh students who received special education services, nearly 86% were placed in regular education schools. The other 14% went to other educational settings, such as residential schools for the deaf. In addition, there was a negative correlation between the educational setting and the level of hearing loss; that was, the more severe the loss, the less likely the students were to attend regular classrooms (NCES, 2012).
In spite of these statistics, no evidence exclusively supports one educational setting over another. The research evidence varies significantly and is not conclusive. For instance, Allen and Osborn (1984) stated that the reading and mathematics performance of D/hh students who were instructed along with their hearing peers were significantly higher than that of D/hh students who received instruction in special education classrooms. However, they also found that the effect size of the integration variable alone was small. Moreover, Erika-Brophy et al. (2012) measured the academic, social, and communication outcomes of 43 D/hh students enrolled in regular education schools. The authors utilized several assessment tools to measure these areas, and the results indicated that the D/hh students performed at the same average level of their hearing classmates in academic tests. Nevertheless, the participants in the study had participated in an intensive speaking and listening program from a very early age; therefore, they might have acquired age-appropriate language skills that helped them to perform as well as their hearing peers. Several factors may justify the higher academic performance of D/hh students in the inclusive settings compared to special classes, such as family support and involvement in their child’s school, high expectations in the general school, extracurricular activities, early intervention programs, language, and communication skills (Luckner & Muir, 2001).

Mishra and Singh (2012) compared the academic performances of 12 students, half of whom attended inclusive settings and half of whom were enrolled in special schools for the deaf. Their results indicated that the group of students who received instruction in schools for the deaf performed significantly better than the group who attended general school. In another study, Paquin and Braden (1990) conducted a longitudinal study and found that D/hh children who attended schools for the deaf had the same IQ scores as those who went to regular schools. Similarly, Abu Shaira (2013) examined the effects of placing D/hh students in regular education
classrooms on language skills acquisition. The study was conducted in Jeddah, Saudi Arabia and utilized a descriptive-comparative survey to collect data from parents and teachers of deaf students, comparing the language skills of students attending regular education schools to those of students attending schools for the deaf students. Both receptive and expressive language skills were evaluated. The scores of receptive language were higher in inclusive settings than the expressive one, and yet the findings did not find a statically significant difference. The researcher concluded that the outcomes of inclusion are less than desired. He attributed this result to a lack of flexibility in the inclusive settings that decreases opportunities for deaf students to practice the spoken language and communicate freely with peers and teachers.

Some deaf education experts (e.g., Cerney, 2007; Mahshie, 1995) stressed that the methods that were used in teaching deaf students did not enable them to learn effectively. They also noted that these students were not provided with interactive opportunities to make sense of what they were learning. Teachers, when addressing issues of diversity in the schools, often overlook children who were deaf. They do not give as much attention to the D/hh students in classrooms as they do to hearing students. They also did not seem to recognize the different experiences that D/hh children bring with them to class.

The literature (Cerney, 2007; Stinson & Antia, 1999) also showed social integration of D/hh students in regular schools is a huge concern for educators, since many deaf students exhibit negative feelings toward their experiences in inclusive settings. These feelings include loneliness and a lack of power, emotional security, and genuine friendships with others. However, the more spoken language a deaf student possesses, the more success he/she will achieve and the fewer negative feelings he/she will have toward the school. The lack of communication skills or social skills is not the only factor that causes these feelings; social
problems can also emerge from cultural differences when deaf students do not feel they are in a secure environment that accepts their differences and culture. When hearing students were asked to rate how they feel about their deaf classmates, many of them reported a lack of understanding of deaf behaviors and needs, and almost half of students would not choose a deaf student as a close friend. Most of the interactions—if any—that occurred between deaf students and their peers without disabilities were non-linguistic interactions, limiting the chances of building close relationships. Social relationships are critical in improving the quality of education and the quality of life in general; they help students learn more effectively and to succeed in school and in life. People who lack social skills have a higher risk of being rejected by others and of developing mental health problems. Communication and language skills are crucial factors in developing adequate social skills (Cerney, 2007; Stinson & Antia, 1999).

Foster (1989) asked a group of deaf students about their experience in regular schools and residential schools. The participants stated that both settings had advantages and disadvantages and, thus, they could not say that one was a better option. They highlighted some significant points, such as that residential schools were important to their culture and to the Deaf community and that they faced obstacles in regular schools (e.g., lack of communication, limited class participation, the feeling of isolation and embarrassment, and limited resources) that forced them to work harder than their hearing peers to catch up. Recently, Doherty (2012) interviewed 16 D/hh students (eight from Northern Ireland and eight from Sweden) regarding their educational experiences. Most of the respondents in both countries thought that deaf students should be taught in separate settings. However, all respondents expressed positive feelings toward inclusive settings. The Swedish students showed more positive attitudes because the Deaf culture and sign language were more integrated in their school environment and the entire community. It is
essential to note that the students’ experience showed that regular school was more challenging for them, as it held higher expectations, and, yet, it provided them with richer academic experiences that eventually increased their learning. This finding is consistent with the advantages that Foster (1989) reported. More importantly, the D/hh students tended to swap academic achievement for the social and communication opportunities they have in segregated schools. Although the D/hh students had more learning opportunities in inclusive settings, they felt excluded, which is why most D/hh students prefer to go to a special school for the deaf rather than to general public school.

Angelides and Aravi (2007) investigated D/hh students’ experiences in regular schools versus schools for the deaf in Cyprus. The authors of this study attributed the poor relationships that D/hh students in regular school had with their teachers and classmates to the low self-esteem of D/hh students more than to the language barriers. Finally, Hung and Paul (2006) examined the attitudes of hearing students towards inclusion practices rather than the behavior of the D/hh students, and they concluded that the hearing students generally held positive attitudes. They also found high correlation between positive attitudes and meaningful contacts between hearing students and their deaf and hearing classmates.

The findings of D/hh students’ perception about inclusion can be summarized in two main points. First, D/hh students thought that regular school provided them with more learning experiences and prepared them better for the world. Second, D/hh students thought that special schools were better for them with regard to social relationships and cultural identity. These two points may explain the difficulty D/hh students had when they were asked to favor one setting over the other.
Teachers’ Beliefs and Attitudes Toward Inclusion

Teachers’ attitudes and beliefs play a primary and critical role in the success of inclusion of students with disabilities in regular schools and are the most important factor for successful inclusion (Antonak & Larrivee, 1995). Downing (2008) wrote, “A fundamental change in attitude is the basic step that must occur before educating all students together successfully” (p. 13). The educational policy in many countries around the globe, including the United States and Saudi Arabia, strive to offer appropriate education services for all students in regular education schools. Nevertheless, total inclusion and acceptance of students with special needs will not occur unless real changes happen in the attitudes of education professionals towards inclusion. Eliminating attitudinal barriers is more crucial than eliminating physical or environmental barriers, and yet it is easy to create laws to provide physical access but no law can force people to change their attitudes (Antonak & Larrivee, 1995). The research provides evidence that supports the positive outcomes of inclusive settings for students with and without disabilities, and yet a body of literature investigated teachers’ attitudes and showed a variety of perceptions, mixed feeling, and skepticism towards inclusion (e.g., AlQuraini, 2011; Avramidis, Bayliss, & Burden, 2000; Gaad, & Khan, 2007; D’Alonzo, Giordano, & Vanleeuwen, 1997; Khochen & Radford, 2012; Olinger, 2013). Teachers seem to hold positive attitudes for the concepts and benefits of inclusion but negative attitudes at the implementation level. The conflicting beliefs are also shown in many teachers who agreed that inclusion would reduce the isolation and stigma of students with disabilities, and that the segregated classes would be more secure and protective (Cornoldi, Terreni, Scruggs, & Mastropieri, 1998).

Scruggs and Mastropieri (1996) reviewed studies of teachers’ attitudes towards mainstreaming and inclusion conducted between 1958 and 1995, and they analyzed the
responses of 10,560 teachers who participated in 28 studies. They found that nearly 65% of the teachers had positive perceptions toward inclusion. However, more than seventy percent of the respondents believed they did not have the appropriate training, time, and skills to implement inclusion successfully. Only half of the teachers were actually willing to teach students with disabilities, yet this willingness was negatively correlated with the degree of disability and the additional teachers’ responsibilities. Dupoux, Wolman, and Estrada (2005) found a significant difference in the ways teachers accepted and welcomed students with disabilities. Most teachers chose students with learning disabilities as their first choice for inclusion, while students with emotional and behavioral problems were lowest on the teachers’ lists of choices. This hierarchical order is relatively comprehensible because many educators consider the deviation from appropriate behaviors and low academic performance as the most difficult challenges for inclusion (Kauffman & Hallahan, 2005). The teachers in Dupoux et al.’s (2005) study also believed inclusion may benefit many students with special needs but may not be realistic for all students. The researchers (Dupoux et al., 2005) stated colleagues’ attitude was the most influential factor on teachers’ attitudes. Teachers who held positive attitudes affected their colleagues with less positive attitude to be more positive. This indicates the important of ambient environment and the school climate.

Larrivee and Cook (1979) identified three major variables that influenced teachers’ attitudes toward inclusion. 1) Regular education teachers’ concerns about the academic success of students with disabilities in general classroom and the educational consequences. 2) Teachers concerns about the lack of administrative support or availability of supportive services. 3) Concerns about the teachers’ ability, skills, training, and experience that are essential to teach students with special needs. Likewise, Koutrouba, Vamvakari, and Steliou (2006) found three
important factors significantly related to regular education teachers’ willingness to accept students with disabilities. These factors were: 1) Teachers’ levels of self-confidence in their ability to teach students with special needs, 2) A belief that regular schools should educate students with special needs in the same class with students without disabilities, and 3) A belief that individuals with disabilities are able to learn and become effective members of the community. Some regular education teachers view inclusion as a policy that forces them to educate students with disabilities in spite of their inadequate training and the behavioral problems such students may cause, which disrupts the learning process of the entire class and requires more time for discipline rather than instruction.

Other teachers stated that teaching students with special needs required the regular education teachers to pay more attention and spend longer time on them with less time allocated for their typical peers (Florian, 2012; Scruggs & Mastropieri, 1996). In addition, a comparison between teachers who held favorable perceptions toward inclusion with teachers who had less positive perceptions indicated the latter used effective instructional strategies less frequently (Bender, Vail, & Scott, 1995). Teachers who have negative attitudes toward teaching students with disabilities in regular classrooms tend, intentionally or unintentionally, to hold lower expectations for their students, which adversely could affects students’ learning experiences (Dusek, 1975). Another study (Talmor, Reiter, & Feigin, 2005) found a strong correlation between the educators’ positive attitudes toward inclusion and the amount of support they receive from the school. Interestingly, they also found that the greater positive attitudes teachers had, the more burnout they experienced. Teachers with positive attitudes received great support, resources and time for preparation from administration, and, yet, they showed enormous commitment to helping their students with special needs, which in turn exhausted them.
With regard to including D/hh students in regular education settings, Eriks-Brophy and Whittingham (2013) investigated teachers’ attitudes towards inclusion and their experience of teaching D/hh students in regular classrooms. The findings indicated the majority (80%) of the teachers agreed that regular education classroom was the appropriate educational option for most D/hh students. The teachers also showed high confidence in their ability and knowledge to teach students with hearing loss and were satisfied with the support they received from the school. However, they felt the pre-teaching programs were insufficient and agreed that inclusion increased their workload and responsibilities. The vast majority of teachers of students with hearing loss were also pleased with their jobs (Luckner & Hanks, 2003). Furthermore, Kopans (2001) surveyed the attitudes of regular education teachers who taught D/hh students. The respondents reported D/hh students to have poorer social skills and lower academic scores than hearing students did. Regardless, the teachers felt capable of teaching D/hh students in the regular education classroom.

In contrast, Vermeulen, Denessen, and Knoors (2012) observed and interviewed nine teachers who taught two students with hearing loss in inclusive settings. The teachers demonstrated less willingness to teach their D/hh students because of the disruptive behaviors. This result is consistent with the common belief that behavioral problems creates challenges for teachers in inclusive settings (Kauffman & Hallahan, 2005). Prakash (2012) identified variables like gender, teachers’ experience, and qualification that contribute to the conflicting attitudes toward including D/hh students in regular education schools.

Rugg and Donne (2011) revealed that D/hh students who use listening and spoken language for communication had very limited vocabularies, which resulted in students needing additional support and time to complete their assignments in regular education classrooms. In
addition, the majority of teachers thought the use of hearing assistive technology improved students’ academic achievements, attention in class, behaviors, and spoken language development (Nelson, Poole, & Munoz, 2013). The findings of the research that investigated teachers’ attitude towards teaching D/hh students in regular education classrooms are consistent with the results of the research that studied other disabilities, which indicates that teachers hold similar views across different types of disabilities, and underline similar factors that affect teachers’ attitudes.

**Factors Influencing Teachers’ Attitudes Toward Inclusion**

*Teachers’ experience:*

A wealth of literature investigated teachers’ experiences or the time they spent in the profession as a potential factor that influences their views toward inclusion. Interestingly, many studies resulted in different conclusions. On one hand, several studies found that the more experience the teachers have in inclusive settings, the more they accept and become comfortable with inclusion (e.g., Dupoux et al., 2005; LeRoy & Simpson, 1996; Prakash, 2012; Saloviita & Takala, 2010; Villa, Thousand, Meyers, & Nevin, 1996). On the other hand, other researchers found a negative correlation between the length of experience and the positive attitudes; namely, younger teachers with fewer years of teaching experience demonstrated more positive views toward and greater acceptance of inclusion (e.g., Avramidis et al., 2000; Bhatnagar & Das, 2013; Brady & Woolfson, 2008; Cornoldi et al., 1998; Dukmak, 2013; Kalyva, Gojkovic & Tsakiris, 2007). Other studies did not find a significant correlation between the years of experience and the teachers’ attitudes (e.g., Heiman, 2001; Koay, Lim, Sim & Elkins, 2006; Logan & Wimer, 2013; Parasuram, 2006).
The literature offered several possible explanations for this disparity. First, those who reported strong correlations between the longer experiences and positive attitudes towards inclusion suggested that the first-hand experience with students with disabilities increased their confidence in their ability to teach all students and eliminated any concern they had. Second, other researchers suggested older and more experienced the teachers were less likely to be open to change. In other words, they viewed new trends as a risk or additional burden to their workload. Inclusive settings required them to acquire new strategies and collaborate with other professionals. The older teachers may view this collaboration as interfering with their jobs. Last, those who did not find a correlation suggested that the length of experience was not a strong variable. They suggested other, stronger variables, like school support or teachers’ collaboration, were more related to attitudes toward inclusion. Therefore, veteran teachers with pleasant experiences with students with disabilities developed positive attitudes, whereas those who faced many problems had more concerns (Cornoldi et al. 1998; Dupoux et al. 2005; Villa et al., 1996). Accordingly, teachers’ years of experience may or may not affect their attitudes towards inclusion of D/hh students in regular classrooms.

*Teachers’ training:*

The literature indicated that the vast majority of the teachers, regardless of whether they had positive or negative views of inclusion, pointed out training as a crucial element that shaped their attitudes toward inclusion. Teachers expressed their urgent need for in-service training (Leatherman, 2007) and pre-service training during the teachers’ preparation programs (Eriks-Brophy & Whittingham, 2013). Most of the negative attitudes toward inclusion emerged from teachers’ concerns regarding their inadequate training to teach students with special needs in regular classrooms (Scruggs & Mastropieri, 1996). Dickens-Smith (1995) surveyed 200 teachers;
half of them were regular education teachers and the other half were special education teachers. She did a pre-test, provided them with a single in-service training session about inclusion, and surveyed them again (post-test). The results showed a significant change from less favorable to more favorable toward inclusion. Similarly, Sosu, Mtika, and Colucci-Gray (2010) investigated the impact of the four-year bachelor education program on the pre-service teachers’ attitudes to inclusion. The researchers employed a mixed method in which they surveyed and interviewed the students in the first year of the program and compared their answers with the answers of the students in the last year of the program. The findings indicated that the program contributed to a significant change in the students’ attitudes from negative to positive. The most changes were observed in the inclusion mindset and learning expectations. Avramidis and Kalyva (2007) highlighted the importance of the ongoing, long-term in-service training for teachers who had negative experiences in inclusive schools to boost their knowledge and skills and thus help them have a pleasant experience. Another study (McCray & McHatton, 2011) stated that the one or two introductory courses offered in the general teacher preparation programs would not be enough to change their attitudes or provide them with knowledge and skills essential for inclusive settings. The authors recommended students need more special education classes throughout their programs.

All of these investigations suggest that the more training teachers receive, whether during their service or in the preparation programs, the more favorable perceptions and acceptance they have towards inclusion. Nevertheless, other studies did not find a correlation between the amounts of training teachers had and their attitudes toward inclusion (e.g., Alquraini, 2011; Brady & Woolfson, 2008; Jane, 2005). Thus, teachers’ training may or may not affect their attitudes towards inclusion of D/hh students in regular classrooms.
Family member with a disability:

The research literature did not indicate many studies that investigated the relationship between having a family member with disabilities and the attitudes towards inclusion. However, Alquraini (2011) investigated this issue as a potential factor that might affect teachers’ attitudes. He surveyed more than 300 teachers. One third of them had a relative with disability, and the remaining participants did not have a relative with special needs. The result did not show a significant correlation between having a family member with disability and teachers’ view to inclusion. The same result was reported by another study with the Saudi’s population (Al-Ahmadi, 2009).

Parasuram (2006) examined the effects of variables like gender, age, income level, having a family member with disability, years of teaching experience, educational level, and acquaintance with an individual with a disability on teachers’ perceptions toward inclusion. The findings showed that the only variable affecting the teachers’ attitudes was the prior relation with a person with a disability, but having a family member with a disability did not affect their attitude. Bhatnagar and Das (2013) also found that teachers who had contact with a person with disabilities showed a more positive attitude toward inclusion than teachers who never had a personal connection with anyone with special needs. While the studies did not find a correlation between having a family member with disability and teachers’ attitudes, the findings indicated that a personal connection with a person influenced the teachers’ perceptions. Subban (2005) stated in her qualitative research that teachers who have a family member with a disability or had worked with student with a disability appeared to show better understanding and awareness of the inclusion process. Therefore, having a family member with disabilities may or may not affect teachers’ attitudes towards inclusion of D/HH students in regular classrooms.
**Gender:**

Similar to other factors mentioned above, many studies examined the correlation between the genders of the teachers and their attitudes towards inclusion. The results differed significantly and the literature recommended further examination. For example, several studies found a significant correlation between the two variables (gender and attitude), in which male teachers were more confident in their abilities to teach students with disabilities and demonstrated higher positive attitudes compared to female teachers (e.g., Al-Ahmadi, 2009; Alquraini, 2011; Bhatnagar & Das, 2013; Ernst & Rogers, 2009; Dukmak, 2013; Jobe, Rust, & Brissie, 1996). In contrast, other investigations found female teachers to be more positive towards inclusion than their male counterparts (e.g., Alghazo & Gaad, 2004; Harvey, 1985; Leyser, & Tappendorf, 2001; Pearman, Huang, Barnhart, & Mellblom, 1992; Prakash, 2012). In addition, some studies reported that the gender of the teachers did not affect their attitudes towards inclusion, and these findings supported the view that gender was not significantly related to attitudes (e.g., Avramidis et al., 2000; Cornoldi et al., 1998; Logan & Wimer, 2013; Parasuram, 2006; Scruggs & Mastropieri, 1996). Therefore, the genders of the teachers may or may not influence teachers’ attitudes towards inclusion of D/hh students in regular classrooms.

**Teachers’ positions (special education versus general education):**

Several factors may affect teachers’ perceptions towards inclusion. Examples of these factors include previous experience of teaching students with disability, acquaintance or contact with an individual with a disability, pre-service and in-service training or, attending courses, workshops, or conferences regarding inclusion. Considering these factors, it is reasonable to assume that special education teachers hold attitudes that significantly differ from those of regular education teachers. Thus, many studies investigated the impact of the teachers’ positions
(special vs general education) on their perceptions to teaching students with special needs.

Several studies found evidence that special education teachers generally held more favorable attitudes towards inclusion than regular education teachers did (Al-Ahmadi, 2009; Bruster, 2014; Elhoweris & Alsheikh, 2006; Scruggs & Mastropieri, 1996; Richard & Roger, 2001). These studies suggested special education teachers might have taken more courses in their preparation programs that provided them with the essential knowledge, skills and awareness of the characteristics of individuals with disabilities. As a result, the special education teachers thought the general classroom would be the least restrictive place for students with disabilities and the most appropriate option for them. In addition, special education teachers tend to have a clear vision of their roles and responsibilities inside the inclusive settings, whereas the roles and responsibilities seem more complicated for the regular education teachers, who often find themselves doing all of the work. Scruggs and Mastropieri (1996) noted that daily communication between regular education teachers and special educators would result in a shift in attitude from negative to positive. Furthermore, Whitaker (2011) found that regular education teachers who had experience with at least one student with disability had more positive attitudes toward inclusion than regular education teachers who had never taught students with disabilities.

In contrast, Alquraini (2011), who compared the perceptions of 300 Saudi teachers, found that regular education teachers demonstrated more positive attitudes towards inclusion than special education teachers did. He attributed this result to the type of experiences his respondents might have had. This explanation is consistent with other research that suggested the positive or negative experiences in the inclusive classroom would have more influence on the teacher’s attitude than his/her teaching position (Cornoldi et al., 1998; Villa et al., 1996; Dupoux et al., 2005). The finding of Alquraini (2011) was consistent with the findings of Hanafe (2009) who...
also found that regular education teachers had more positive attitudes toward teaching D/hh students in regular schools in Saudi Arabia.

Further, Davis (2009) compared the attitudes of 113 teachers and found no significant difference in the attitudes of general educators and special educators. Davis’s finding is very close to that of another study (Al-Ahmad, 2009), which reported attitudes were positive for the special education teachers but the effect size was very small. Accordingly, the current position of the teachers may or may not affect teachers’ attitudes towards inclusion of D/hh students in regular education classrooms.

**Summary of the Chapter**

This chapter presented the literature related to the topic under investigation. It aimed to offer the readers a foundation for the topic of the current research. While Saudi Arabia follows the educational experience of the developed countries such as the United States, England and France, it still has its unique cultural challenges. In addition, the literature indicated a dramatic shift in the special education services as it moved from segregating students with disabilities to including them in the regular education schools. The empirical research provides evidence that supports the effectiveness of inclusion to improve the social and academic outcomes of students with disabilities. In light of these findings, Saudi Arabia is moving to more inclusive education just like many other nations around the world. However, inclusion is a mindset not a place, and thus it is critical for a successful implementation of inclusion that everyone views it positively. Teachers, in particular, are central key in the inclusive process. Their attitudes will vastly affect the education of people who are deaf and hard of hearing. While many parents and individuals with disabilities support inclusion, deaf education advocates may not share the same enthusiasm. Consequently, including D/hh students in regular education classroom is more complicated than
any other disabilities. The purpose of the current research is to examine how regular education teachers and teachers of the D/hh in Saudi Arabia perceive inclusion of D/hh in regular education schools.
CHAPTER 3

METHODOLOGY

The purpose of this quantitative study was to investigate teachers’ attitudes towards the inclusion of D/hh students in regular education settings in the Kingdom of Saudi Arabia. This study employed a descriptive research design to examine the teachers’ perceptions with regard to the following factors: a) teachers’ years of experience, b) the training teachers receive either before or during their service, c) gender, d) whether a teacher has a family member with a disability, e) whether a teacher had previously taught students with disabilities, and f) whether a teacher’s background is special education or regular education.

This chapter describes the research questions, nature of the research design, independent and dependent variables, demographics of the participants, sampling procedures, instrumentation and the study instrument, validity and reliability of the instrument, translation and adaptation process of the instrument, data collection procedures and, finally, the data analysis method.

Research Questions

The present study attempted to address the following questions:

1) What are the overall attitudes of Saudi general and special education teachers towards including D/hh students in regular education classrooms?

2) Are there differences in the teachers’ attitudes based on their years of teaching experience?

3) Are there differences in the teachers’ attitudes based on the training they may or may not have received on inclusion?

4) Are there differences between the attitudes of female teachers versus male teachers?
5) Are there differences between the attitudes of teachers who have a family member with disabilities and teachers who do not?

6) Are there differences in the teachers’ attitudes based on whether they have previously worked with a student with a disability?

7) Are there differences between the attitudes of regular education teachers and special education teachers?

**Nature of the Research Design**

The purpose of this study was to examine the teachers’ attitudes towards teaching D/hh students in regular education classrooms. Therefore, the researcher decided a descriptive research design would be the most appropriate to address the research questions. According to Rumrill, Cook, and Wiley (2011), many researchers in the field of special education adopt a descriptive research design to describe events, experiences, attitudes, beliefs, and behaviors. Likewise, Hill, Newmark, and Le Grange (2003) asserted that a descriptive design would be appropriate to study perceptions, views, and attitudes that are held toward a given trend or practice. Researchers use a variety of sources to collect data and information for descriptive studies, including surveys, case studies, historical/archival research, program evaluations, empirical literature reviews, and meta-analysis. Surveys, in particular, are a very common type of descriptive research in recent special education literature (Rumrill et al., 2011). Mertens and McLaughlin (1995) noted that a survey could be adopted as a tool to collect information for other types of research design, or it could represent a descriptive type of research by itself. The main purpose of using survey research is to measure the condition or status of variables in a sample of respondents (Rumrill et al., 2011). The major advantage of using a survey in descriptive research is that it allows the researcher to collect information from a large group of respondents.
that may be difficult to observe or interview (Mertens & McLaughlin, 1995). A survey also provides the respondents with freedom and anonymity, which encourages them to express their attitudes, feelings, and views with a high degree of honesty (Cohen, Manion, & Morrison, 2004).

**Research Variables and Demographics**

The dependent variable in this study was the teachers’ attitude towards the inclusion of D/hh students in regular education settings in Saudi Arabia. The independent variables in this study included the following: the teaching position (whether the respondent is a special education teacher or a regular education teacher), training on inclusion concepts and practices the teachers have received, years of teaching experience, the teachers’ gender, prior work with students with disabilities, and having a family member with disabilities. The current study examined the relationship and effects the independent variables have on the teachers’ attitudes toward the inclusion of D/hh students in regular education settings in Saudi Arabia. The researcher collected the following demographic information: gender, teaching position (special educators or general educators), years of teaching experience, previous courses or training, previous experience teaching students with disabilities, and whether they have a family member with a disability.

**Population and Participants**

The target population in this study included male and female special education (with specialty in teaching D/hh students) and regular education teachers in Saudi Arabia. The researcher sought a sample size of 200 teachers. The sample was purposive. A purposive sample is when the participants are selected from a specific group (Hinkle, Wiersma, & Jurs, 2003). In the current study, the researcher sent the online survey via a cellphone application.
called WhatsApp to certain online groups that included nearly 590 teachers. After removing invalid data, the actual sample size was 196 teachers who represented the target population. Therefore, the study sample included regular education teachers who work either in inclusive regular education schools or in non-inclusive regular schools and special education teachers with training in teaching D/hh students who work either in special education programs (self-contained classes) in regular schools or in Al-Amal institutions for the Deaf.

**Instrument and Materials**

This study employed a translated version of the Opinion Relative to Integration of Students with Disabilities (ORI) (see Appendix A for a full copy of the survey) to evaluate teachers’ attitudes toward the inclusion of D/hh students in regular education settings in the Kingdom of Saudi Arabia. The ORI is a revised version of the Opinion Relative to Mainstreaming (ORM) scale that was developed by Larrivee and Cook (1979) as a part of a large-sample study to measure the teachers’ attitudes toward mainstreaming students with disabilities in regular education schools. Antonak and Larrivee (1995) later revised the survey, updated the language (for example, they changed “handicap” to “disability”), and provided additional support for the survey’s validity. Since then, the ORI has been used as the primary instrument by many researchers to measure teachers’ attitudes towards the inclusion of students with disabilities in regular education classrooms (Al-Ahmadi, 2009; Alquraini, 2011; Bruster, 2014; Dupoux et al. 2005; Jobe et al., 1996; Whitaker, 2011). The ORI questionnaire contains 25 statements, such as “Students with disabilities can best be served in regular education classrooms,” or “Teaching students with disabilities is better done by special than by general classroom teachers.” The 25 statements are divided into four categories: benefits of inclusion, presented in 8 statements (items 3, 7, 11, 14, 17, 20, 21, and 24); inclusive settings management,
presented in 10 statements (items 1, 4, 6, 9, 12, 15, 16, 18, 22, and 25); perceived ability to teach students with disabilities, presented in 3 statements (items 2, 10, and 19); and finally, special education versus inclusive settings, presented in 4 statements (items 5, 8, 13, and 23). In addition, 13 of the scale statements are positive, such as “Most students with disabilities will make an adequate attempt to complete their assignments,” whereas the other 12 statements are negative, such as “It is likely that a student with a disability will exhibit behavior problems in a regular education classroom.” The scale respondents rated the 25 statements on a Likert scale ranging from strongly agree (+3) to strongly disagree (-3). This rating scale was developed by Likert in 1932, and it is considered one of the most common techniques that researchers used to measure attitudes and perceptions toward the given issues (Antonak & Larrivee, 1995). The responses were calculated by reversing the signs of the negative items (+ to – and – to +) and then summing the 25 responses and adding a constant of 75 to the total to eliminate the negative scores and obtain continuous data. The total scores ranged from 0–150, with higher scores representing greater favorable attitudes toward inclusion. Anatonak and Larrivee recommended this score calculation process, and the researcher followed their precise recommendation to ensure the accurate interpretation of the results.

As mentioned earlier, the ORI has been used in many recent studies as a valid and reliable instrument to measure teachers’ attitudes towards the inclusion of students with disabilities in regular education classrooms (Al-Ahmadi, 2009; Alquraini, 2011; Bruster, 2014; Dupoux et al., 2005; Jobe et al., 1996; Whitaker, 2011). The validity of an instrument refers to whether it is able to measure what it was developed to assess. In other words, the validity of a given instrument reflects the value and credibility of that instrument (Rumrill et al., 2011). In this case, Anatonak and Larrivee (1995) tested the validity of the ORI to measure the attitudes of
the teachers towards including students with disabilities in regular education classrooms by using a hierarchical multiple-regression analysis, and they reported a satisfactory result that supported the construct validity. The hierarchical multiple-regression analysis is a statistical test that evaluates the relationship between a set of independent and dependent variables (Peck, Olsen, & Devore, 2009). Anatonak and Larrivee also asked the participants to complete the Scale of Attitudes Toward Disabled Persons (SADP) in conjunction with ORI to test the concurrent validity, and they reported Cronbach’s alpha coefficient was 0.83, which indicates a high relationship between the two tests. Furthermore, Anatonak and Larrivee (1995) tested the reliability of the ORI, and they stated that the Cronbach’s alpha coefficient was 0.88, and the Spearman-Brown corrected split-half reliability estimate was 0.82. The reliability of a test refers to its ability to provide consistent scores (Rumrill et al., 2011). Other researchers who used the ORI in their research have reported high reliability scores, too. For example, Dupoux et al. (2005) reported the Cronbach’s alpha coefficient was 0.83, Jobe et al. (1996) reported 0.90, and in the Saudi research using the Arabic translation of ORI Al-Ahmadi (2009) reported 0.73, and Alquraini (2011) reported 0.84. The Cronbach’s alpha is the average of all possible split-half coefficients resulting from different ways of splitting the scale items. The Cronbach’s alpha varies from 0 to 1, and values greater than 0.7 indicate higher degrees of internal consistency. (Hair, Anderson, Tatham & Black, 1998). The researcher calculated the Cronbach’s alpha for the data of the present study, the overall survey score was 0.87, which reflected a high degree of internal consistency, and scores of the four subscales were reported in Table 1.

The researcher contacted the authors of the ORI, Dr. Anatonak and Dr. Larrivee, to request written permission to use the ORI, and Dr. Larrivee gave the written permission as requested (Appendix B).
Table 1

*The Cronbach’s Alpha Values for the ORI-Arabic Version*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>No. of Items</th>
<th>Cronbach’s Alpha</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Benefits of inclusion</td>
<td>8</td>
<td>0.787</td>
<td>194</td>
</tr>
<tr>
<td>2. Inclusive settings management</td>
<td>10</td>
<td>0.720</td>
<td>196</td>
</tr>
<tr>
<td>3. Perceived ability to teach students with disabilities</td>
<td>3</td>
<td>0.529</td>
<td>196</td>
</tr>
<tr>
<td>4. Special education versus inclusive settings</td>
<td>4</td>
<td>0.640</td>
<td>196</td>
</tr>
<tr>
<td><strong>Overall ORI Scale</strong></td>
<td><strong>25</strong></td>
<td><strong>0.872</strong></td>
<td><strong>194</strong></td>
</tr>
</tbody>
</table>

In addition, the researcher translated the instrument from English to Arabic via a certified translator and made a minor modification in which the term “students with disabilities” was changed “D/hh students.” Beside the use of ORI, the researcher included two other parts in the survey. The first part to collect the relevant demographic data, such as gender, teaching position (special educators or general educators), years of experience, previous courses or training on inclusion, previous experience teaching a student with a disability, and whether they have a family member with disabilities. The last part was an open-ended question to collect teachers’ comments and opinions regarding teaching D/hh students in regular education classrooms. The aim of the open-ended question was to obtain the respondents’ insights that they were unable to express in the closed questions. The researcher utilized a content analysis to identify the more frequent answers versus the less frequent ones, coded them into themes as appropriate, and discussed them in more detail in relation to the literature.

**Translation**

The researcher translated the English ORI survey into the Arabic language because the participants of the study were Saudis, and their primary language was Arabic. There are several
techniques the researchers commonly used to ensure the quality of the translation, such as: the bilingual method, back-translation, committee approach, and a pilot study (Beaton, Bombardier, Guillemin, & Ferraz, 2000). However, this was not a cross-cultural study; thus, the researcher selected a committee approach. First, the researcher sent the English version to a certified office for translation. After the researcher received the Arabic translation, he sent it to five professors of special education with specialty in D/hh education to complete it. The purpose of sending the Arabic version to the committee was to find any concerns or flaws in the translated version of the survey and whether the use of words or terminology, the length, or the clarity of questions were appropriate.

**Data Collection**

The researcher sought the permission of the Committee for the Protection of Human Subjects in Research Institutional Review Board (IRB) at Ball State University. In addition, the researcher asked for a permission from the Ministry of Education in Saudi Arabia (Appendix C) to allow him to conduct his study in the Saudi public schools. Following the receipt of permission, the researcher visited the Ministry of Education in person to make some arrangements regarding the sample selection. The researcher met with the Director of the Hearing Impairment Department and a Supervisor in Regular Education. After discussing the details of the project, the two individuals suggested that the best method to reach teachers would be through a cellphone application called WhatsApp. Teachers have so many groups in the WhatsApp in which to discuss their issues. With assistance from the director of the Hearing Impairment Department and the Supervisor of Regular Education, the online survey was sent to six groups that contained regular education teachers and deaf education teachers. In other words, the researcher distributed the survey to the teachers and collected the data electronically via
online channels. The researcher used a web-based internet survey (Qualtrics) as a platform to create and deliver the online survey. The web-based internet survey has become a very popular tool in collecting data as opposed to other traditional methods. Online surveys provide so many advantages, such as (1) saving time and money because they are faster and cheaper to distribute; (2) reaching more participants from different geographic locations; (3) being very convenient and easy to use by participants, which increases the response rate; (4) providing additional anonymity, confidentiality, and freedom that may result in more honesty when responding to questions; and (5) offering a faster and easier transfer of data for analysis (Andrews, Nonnecke, & Preece, 2003). The researcher followed specific guidelines to minimize the flaws attached to online surveys. For instance, he designed the survey to work on several platforms and devices (cell phones, computers, different browsers), prevented multiple submissions from the same device, and allowed participants to access the survey multiple times before their final submission.

The survey included three sections: 1) The approval letters from the IRB and the Ministry of Education, which allowed the researcher to conduct his study; 2) a cover letter to describe the purpose of the study, the rights of the participants, and the process of completing the survey; and 3) the ORI survey, which contained three parts: A) demographic information, B) twenty five Likert scale questions, and C) an open-ended question. The researcher tested the length of the survey with five individuals and found that it required about 20 minutes to complete. The process of data collection lasted for two months between August and October 2015.

**Data Analysis**

Since the current study was a descriptive survey in which numerical data were used to describe attitudes (teachers’ attitudes) towards a given practice (Inclusion of D/hh students), the
researcher utilized the Statistical Package for the Social Sciences (SPSS) software to analyze the data and test relationships between the variables. Rumrill et al. (2011) wrote, “Statistical methods of data analysis are pivotal to all quantitative research” (p. 38). The analysis procedures consisted of two parts as the follows:

Part 1) **Descriptive statistics**: This part addressed and analyzed the first research question, which was: What are the overall attitudes of Saudi general and special education teachers toward including D/hh students in regular education classrooms? Descriptive statistics are used to demonstrate the basic data of the study. They includes distributions, means, frequencies, percentage, and standard deviations of the variables. In this study, the descriptive statistics describe the data collected from the participants with regard to the demographic information (gender, teaching position (special educators or general educators), years of experience, previous courses or training, previous experience teaching a student with a disability, having a family member with a disability) to answer the first question. Descriptive statistics are very useful in understanding the value and characteristics of the subject under investigation (Rumrill et al., 2011).

Part 2) **Inferential statistics**: This part refers to “a family of techniques for translating empirical data into probability statements that are used as the basis for reaching decisions about research hypotheses” (Rumrill et al., 2011, p. 59). By using inferential statistics, the researcher answered questions 2, 3, 4, 5, 6 and 7 using the following tests:

**Question 2**: The Kruskal-Willis analysis was used to check whether there were significant differences in the teachers’ attitudes based on their years of experience. The Kruskal-Willis test is a non-parametric test that is equivalent to the analysis of variance (ANOVA) but does not assume a normal distribution (Hinkle et al., 2003). This question contained a categorical
independent variable with more than two levels, and it was appropriate to use the Kruskal-Willis analysis to answer the question because the normality assumption was violated, which made an ANOVA inappropriate.

Question 3: Independent t-test was used to determine whether there were significant differences between the attitudes of teachers with no training of inclusion versus teachers with training of inclusion. An independent sample T-test is another statistical test that determines whether significant differences exist in the means of two groups (Peck et al., 2009; Rumrill et al., 2011).

Question 4: An independent t-test was employed to decide whether there were significant differences between the attitudes of male teachers versus female teachers.

Question 5: A Mann-Whitney U test was used to determine whether there were significant differences between the attitudes of having a family member with a disability versus not having a family member with a disability. The Mann-Whitney U test is a non-parametric test that is equivalent to a t-test but does not require a normal distribution (Hinkle et al., 2003). The data did not follow the normal distribution, and hence the Mann-Whitney U test was more appropriate to answer this question.

Question 6: An independent t-test was used to determine whether there were significant differences between the attitudes of teachers who had previously worked with students with disabilities versus teachers who had never taught students with disabilities.

Question 7: An independent t-test was employed to determine whether there were significant differences between the attitudes of special education teachers versus regular education teachers.
Assumptions and Limitations

The current research included several assumptions and limitations that need to be mentioned. First, the researcher employed an online survey in which teachers’ responses cannot be controlled; hence, it was assumed that the teachers who participated in the study completed the survey with the utmost honesty and accuracy. Second, because the full inclusion of D.hh students is not currently widely implemented in Saudi Arabia, the researcher assumed that a very limited number of teachers of D.hh students had actual experience with full inclusion as well as a limited number of regular education teachers who had previously taught D.hh students in their classrooms. Therefore, the researcher assumed that the sample was representative of the population from which it could be drawn. Third, the number of resources and studies that investigated teachers’ attitudes toward inclusion, both in general and with regard to D.hh students in particular, in Saudi Arabia and Arab countries is very limited. Therefore, most of the literature reviewed in this research was conducted in western countries. Last, the scope of the present study covered the attitudes of teachers toward teaching D.hh students in regular classrooms in Saudi Arabia. Therefore, these findings cannot be generalized to other categories of disabilities.

Summary of the Chapter

This chapter described the method and procedures that the researcher used to address the topic and questions under investigation. It started with the research questions, a brief description of the research design, and the rationale of using it, followed by the research variables and demographics. Then, the population and participants were described, followed by the research instrument, translation process, data collection procedures, and data analysis procedures. The chapter finally ended with the assumptions and limitations.
CHAPTER 4

RESULTS

The purpose of the current study was to investigate teachers’ attitudes toward teaching D/hh students in regular education classrooms in Saudi Arabia. As stated in Chapter 3, the data collection instruments included a demographic section, the ORI survey (25 items that measure teachers’ attitudes toward teaching D/hh students in regular education schools on a 6-point Likert scale), and an open-ended question to collect teachers’ comments and opinions regarding teaching D/hh students in regular education classrooms. The demographic section collected information related to the independent variables of this study that may influence a teacher’s attitude. The independent variables included the teacher’s gender, educational background, which referred to whether the respondent was a special education teacher or a regular education teacher, any training on inclusion concepts and practices the teacher might have received, years of teaching experience in inclusive settings, whether the teacher had prior experience with students with disabilities, and having a family member with disabilities. The data analysis was completed as follows:

1) Frequencies and percentages of the demographic information and descriptive statistics were calculated.

2) Parametric and non-parametric tests were conducted: Independent samples t test, Kruskal-Wallis test, and Mann-Whitney U test.

3) Themes that emerged from the analysis of the open-ended questions were identified, coded, and organized (Mayring, 2014).
Response Rate

Before distributing the questionnaire, the researcher consulted two individuals who work in the Ministry of Education. The first individual works as the director of the Department of Hearing Disabilities. The second individual is the Supervisor for General Education. Both administrators recommended distributing the questionnaire through a smartphone application named WhatsApp because it is easily accessible and widely used by teachers in Saudi Arabia. Consequently, the online survey was sent via WhatsApp to male and female teachers who either teach regular education or D/hh students. To calculate the response rate, the researcher asked the two administrators to count the total number of teachers in each group that received the survey. The questionnaire was sent to six groups with a total of 587 teachers; 264 responses were recorded in the Qualtrics database, resulting in a 45% response rate. Out of the 264 returned surveys, only 196 (74%) responses were valid and useable for data analysis, whereas the remaining 68 responses were invalid and thus were excluded from the data analysis.

Participants’ Demographic Information

As described in the response rate section, 264 responses were reported. After excluding incomplete responses, there were 196 remaining participants. This section discusses the demographic information of the participants, which includes gender, area of education (special education versus regular education), years of experience, prior courses and training, previous experience in teaching students with disabilities, and whether the participant has a family member with a disability. This demographic information was the independent variable in the current study, and the researcher examined its influence on the teachers’ perceptions toward teaching D/hh students in regular classrooms in Saudi Arabia.
The descriptive statistics (Table 2) indicated that out of the 196 total valid responses, 102 participants were male teachers, a valid percentage (52.3%) of the survey sample, and 93 participants (47.7%) were female teachers. With regard to their educational backgrounds, 88 teachers (45.4%) taught D/hh students, while 106 teachers (54.6%) had a regular education background. The majority of participants (106 teachers, 55.2%) had eight or more years of teaching experience. Thirty-four participants (17.7%) had a medium amount of experience (4–7 years), and 52 educators (27.1%) were relatively new teachers with only three years of experience or less. In addition, the data showed that 85 (43.6%) of the study participants had received prior training pertaining to inclusive education, whereas the remaining participants (n=110, 56.4%) stated they never had taken part in any previous training. The analysis also indicated that 101 teachers (51.5%) had taught at least one student with a disability in a public school. The remaining participants (n=95, 48.5%) reported they had never taught a student with a disability. Lastly, only 54 of the participants (27.5%) revealed that they had a family member with a disability, whereas 142 teachers (72.5%) did not have any family member with disabilities. All missing values are recorded in Table 2.

Since the researcher was also interested to know more about the sample demographic characteristics, he ran a cross-tabulation test for the survey sample and found that 47 (45.6%) of the male teachers had a deaf education background as opposed to 56 (54.4%) male teachers with only a regular education background. In contrast, 43 (46%) of the female teachers had a deaf education background, versus 50 (54%) female teachers with a regular education background. Furthermore, 69 (78%) deaf education teachers stated they had received training on inclusive education, while only 17 (16%) regular education teachers had participated in that same training. Likewise, 67 (75%) deaf education teachers had taught a student with a disability in regular
schools, but only 34 (32%) of the regular education teachers had worked with a student with a disability in a regular classroom.

Table 2

*Demographic Background of the Participants (n=196).*

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>n</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>102</td>
<td>52.3%</td>
</tr>
<tr>
<td>Female</td>
<td>93</td>
<td>47.7%</td>
</tr>
<tr>
<td>Missing values</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Educational Background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special education</td>
<td>88</td>
<td>45.4%</td>
</tr>
<tr>
<td>Regular education</td>
<td>106</td>
<td>54.6%</td>
</tr>
<tr>
<td>Missing values</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Years of Teaching Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–3 years</td>
<td>52</td>
<td>27.1%</td>
</tr>
<tr>
<td>4–7 years</td>
<td>34</td>
<td>17.7%</td>
</tr>
<tr>
<td>8 years or more</td>
<td>106</td>
<td>55.2%</td>
</tr>
<tr>
<td>Missing values</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Prior Training on Inclusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>85</td>
<td>43.6%</td>
</tr>
<tr>
<td>No</td>
<td>110</td>
<td>56.4%</td>
</tr>
<tr>
<td>Missing values</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Prior Teaching Students with Disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>101</td>
<td>51.5%</td>
</tr>
<tr>
<td>No</td>
<td>95</td>
<td>48.5%</td>
</tr>
<tr>
<td>Missing values</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Having a Family Member with a Disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54</td>
<td>27.5%</td>
</tr>
<tr>
<td>No</td>
<td>142</td>
<td>72.5%</td>
</tr>
<tr>
<td>Missing values</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Research Question One: 
What are the overall attitudes of Saudi regular and special education teachers toward including D/hh students in regular education classrooms?

In order to address this question, the researcher computed descriptive statistics in the form of frequencies and percentages for the 25 items of the ORI questionnaire to examine the teachers’ total attitudes regarding teaching D/hh students in regular education classrooms. The 25 ORI items were scored on a 6-point Likert scale that reflects a level of agreement from I agree very much to I disagree very much. To determine whether the overall teachers’ attitudes toward including D/hh in regular classrooms were positive or negative, the items I agree very much, I agree pretty much, and I agree a little were combined. I disagree very much, I disagree pretty much, and I disagree a little were also merged. The responses of the survey sample are shown in Table 3.

As indicated in Table 3, with regard to the positively worded statements (items 1, 3, 5, 7, 10, 13, 15, 16, 17, 19, 21, 22, and 25), the teachers who participated in the current study expressed the most agreement on items 21 (95%), 1 (81%), and 3 (80%). Therefore, the respondents showed a mostly positive attitude that deaf and hard of hearing students should be given every opportunity to function in a public school when possible (item 21), most deaf and hard of hearing students will make an adequate attempt to complete their assignments (item 1), and inclusion offers mixed-group interaction that will foster understanding and acceptance of differences among students (item 3).

On the other hand, with regard to the negatively worded statements (items 2, 4, 6, 8, 9, 11, 12, 14, 18, 20, 23, and 24), the teachers who participated in the current study expressed the most agreement on items 2 (98%), 23 (91%), and 8 (88%) (Table 3). Since these statements
were negatively worded, the participants’ agreement reflects a negative attitude toward including D/hh students in regular education classrooms. Therefore, the participants indicated mostly negative attitudes that the inclusion of deaf and hard of hearing students will necessitate extensive retraining of general-classroom teachers (item 2), teaching deaf and hard of hearing students is better done by special education teachers instead of general classroom teachers (item 23), and inclusion of deaf and hard of hearing students will require significant changes in public school procedures (item 8).

In general, among all 25 survey items, the top 5 statements that received the most agreement were items 2 (98%), 21 (95%), 23 (91%), 8 (88%), and 9 (83%). Four of these five items were negative statements (items 2, 23, 8, and 9).

In addition, the researcher followed the scoring process that was explained by Antonak and Larrivee (1995); thus, the researcher calculated the 25 item responses and then added a constant of 75 to the total score of each respondent to eliminate any negative scores. The final score for each participant therefore ranged from 0–150; scores of 75 or higher reflected positive attitudes toward inclusion, and scores less than 75 suggested negative ones. The results indicated that the overall mean of the total final scores was 70.2, which reflected a slightly negative attitude toward the full inclusion of D/hh students in regular education classrooms in Saudi Arabia. With regard to the mean scores of subscales, Table 4 showed that the first factor (benefits of inclusion) had the highest mean (81.02), which is considered slightly positive, whereas the third factor (perceived ability to teach students with disabilities) had the lowest mean (68.42), which is considered negative.

Finally, as noted in Table 3, item number five was straightforward and directly asked the participants whether they believed deaf and hard of hearing students can best be served in a
public school. Nearly 53% (n=103) of the survey sample agreed to this question, while 47% (n=93) of the participants disagreed.

Table 3

*Teachers’ Attitudes toward the Inclusive Education for D/hh Students in Saudi Arabia (n=196)*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree FQ (%)</th>
<th>Disagree FQ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Most deaf and hard of hearing students will make an adequate attempt to complete their assignments.</td>
<td>158 (81%)</td>
<td>38 (19%)</td>
</tr>
<tr>
<td>2. The inclusion of deaf and hard of hearing students will necessitate extensive retraining of general classroom teachers.*</td>
<td>192 (98%)</td>
<td>4 (2%)</td>
</tr>
<tr>
<td>3. Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.</td>
<td>156 (80%)</td>
<td>40 (20%)</td>
</tr>
<tr>
<td>4. It is likely that the deaf and hard of hearing students will exhibit behavior problems in a public school.*</td>
<td>135 (68%)</td>
<td>61 (32%)</td>
</tr>
<tr>
<td>5. Deaf and hard of hearing students can best be served in a public school.</td>
<td>103 (53%)</td>
<td>93 (47%)</td>
</tr>
<tr>
<td>6. The extra attention deaf and hard of hearing students require will be to the detriment of the other students.*</td>
<td>137 (70%)</td>
<td>59 (30%)</td>
</tr>
<tr>
<td>7. The challenge of being in a public school will promote the academic growth of deaf and hard of hearing students.</td>
<td>152 (78%)</td>
<td>44 (22%)</td>
</tr>
<tr>
<td>8. Inclusion of deaf and hard of hearing students will require significant changes in public school procedures.*</td>
<td>173 (88%)</td>
<td>23 (12%)</td>
</tr>
<tr>
<td>9. Increased freedom in a public school creates too much confusion for deaf and hard of hearing students.*</td>
<td>163 (83%)</td>
<td>33 (17%)</td>
</tr>
<tr>
<td>10. General classroom teachers have the abilities necessary to work with deaf and hard of hearing students.</td>
<td>24 (12%)</td>
<td>172 (88%)</td>
</tr>
</tbody>
</table>
11- The presence of deaf and hard of hearing students will not promote the acceptance of differences on the part of students without disabilities.*

12- The behavior of deaf and hard of hearing students will set a bad example for students without disabilities.*

13- Deaf and hard of hearing students will probably develop academic skills more rapidly in a public school than in a special school.

14- Inclusion of deaf and hard of hearing students will not promote their social independence.*

15- It is not more difficult to maintain order in a public school that contains a deaf or hard of hearing student than in one that does not contain a deaf and hard of hearing student.

16- Deaf and hard of hearing students will not monopolize the public school teachers’ time.

17- The inclusion of deaf and hard of hearing students can be beneficial for students without disabilities.

18- Deaf and hard of hearing students are likely to create confusion in a public school.*

19- Public school teachers have sufficient training to teach deaf and hard of hearing students.

20- Inclusion will likely have a negative effect on the emotional development of deaf and hard of hearing students.*

21- Deaf and hard of hearing students should be given every opportunity to function in a public school when possible.
22- The classroom behavior of the deaf and hard of hearing students does not generally require more patience from the teacher than does the classroom behavior of students without a disability.

23- Teaching deaf and hard of hearing students is better done by special education teachers instead of general classroom teachers.*

24- Isolation in a special school has a beneficial effect on the social and emotional development of deaf and hard of hearing students.*

25- Deaf and hard of hearing students will not be socially isolated in a public school.

* Negatively worded statements.

FQ = Frequency, (%) = Percentage.

Table 4

Distribution of Teachers’ Attitudes Based on Their Scores on the Subscales.

<table>
<thead>
<tr>
<th>Overall attitude</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Benefits of inclusion</td>
<td>81.02</td>
<td>9.21</td>
</tr>
<tr>
<td>2. Inclusive settings management</td>
<td>74.79</td>
<td>10.18</td>
</tr>
<tr>
<td>3. Perceived ability to teach students with disabilities</td>
<td>68.42</td>
<td>2.67</td>
</tr>
<tr>
<td>4. Special education versus inclusive settings</td>
<td>70.94</td>
<td>4.92</td>
</tr>
</tbody>
</table>

Negative attitude: less than 75 of the total score. Positive attitude: 75 or more of the total score.

Research Question Two

Are there differences in the teachers’ attitudes based on their years of teaching experience?

This question asked if there were statistically significant differences in the teachers’ attitudes based on their years of teaching experience. The independent variable “years of experience” had three levels, and thus the analysis of variance (ANOVA) for a comparison
between these groups seemed an appropriate test to answer this question, but there are assumptions that should not be violated—such as the normality of the dependent variable—to use the ANOVA as an inferential statistic. Therefore, the researcher must check the normality of the dependent variable (overall attitude) and conduct detection for outliers.

The first feature of the normal distribution is that the mean, median, and mode are equal, where here they were not so (Table 5).

Table 5

Statistics of the Overall Attitudes.

<table>
<thead>
<tr>
<th>Overall Attitude</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>196</td>
<td>70.1582</td>
<td>73.5000</td>
<td>74.00</td>
<td>22.08586</td>
</tr>
</tbody>
</table>

a. Multiple modes exist. The smallest value is shown

In addition, as noted in Table 6 and the figure below (Figure 1), there were two extreme values (outliers) represented by participant number 72 (the highest at 130) and 156 (the lowest at 9). It is critical to safely conduct an ANOVA test to ensure that the data contain no outliers. Therefore, the researcher checked the normality again after removing the two outliers (Figure 2), and the results (see Table 7) indicated the two statistics of Kolmogorov-Smirnov and Shapiro-Wilk tests were significant at p < 0.05 (.005 and .040, respectively), signifying non-normality.

Table 6

Normality Test with Outliers.

<table>
<thead>
<tr>
<th>Overall Attitude</th>
<th>Kolmogorov-Smirnova</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistics Df Sig.</td>
<td>Statistics Df Sig.</td>
</tr>
<tr>
<td></td>
<td>.077 196 .077</td>
<td>.988 196 .107</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction
Figure 1. Histogram and boxplot of overall attitude with outliers.
Table 7

*Normality Test after Removing the Outliers.*

<table>
<thead>
<tr>
<th>Overall Attitude</th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistics</td>
<td>Df</td>
</tr>
<tr>
<td></td>
<td>.079</td>
<td>194</td>
</tr>
</tbody>
</table>

<sup>a</sup> Lilliefors Significance Correction

*Figure 2.* Histogram and boxplot of overall attitude without outliers.
More importantly, when the researcher checked the normality of the overall attitude by
the independent variable (years of experience), which had three levels (3 years or less, 4–7 years,
and 8 years or more), the results showed that one of the three levels (3 years or less) was
significant \( p < 0.05 \) in both normality tests Kolmogorov-Smirnov and Shapiro–Wilk (.005 and
.039, respectively) (Table 8). There were a few outliers, too (Figure 3).

Table 8

*Normality Test for Years of Experience.*

<table>
<thead>
<tr>
<th>How many years of teaching experiences do you have?</th>
<th>Tests of Normality</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kolmogorov-Smirnov</td>
<td>Shapiro-Wilk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statistic df Sig.</td>
<td>Statistic df Sig.</td>
<td></td>
</tr>
<tr>
<td>fixedscores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years or less</td>
<td>.151 52 .005</td>
<td>.953 52 .039</td>
<td></td>
</tr>
<tr>
<td>4-7 years</td>
<td>.102 35 .200*</td>
<td>.949 35 .105</td>
<td></td>
</tr>
<tr>
<td>8 years or more</td>
<td>.076 106 .157</td>
<td>.987 106 .422</td>
<td></td>
</tr>
</tbody>
</table>

*This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 3. Boxplot of years of experience.
The results of the normality tests, as explained above, revealed a violation of the assumption of normality, which raises the risk of gaining inaccurate results if the researcher conducts an ANOVA to answer this question. Consequently, the researcher decided to run a Kruskal-Wallis instead of a one-way ANOVA. The Kruskal-Wallis test is a non-parametric test that is equivalent to an ANOVA but does not assume the data follow a normal distribution, and it tests the medians instead of the means (Hinkle et al., 2003).

As indicated in Table 9, a Kruskal-Wallis H test showed that there was no statistically significant difference in the score of teachers’ attitudes based on years of experience ($\chi^2 = 4.049, p = 0.132$) with a mean rank attitude score of 109.44 for teachers with 3 years or less experience, 88.19 for teachers with 4–7 years’ experience, and 92.82 for teachers with 8 years of experience or more. The null hypothesis for this question was that there would be no statistically significant differences in the teachers’ attitudes based on their years of experience. Since the chi-square test statistic was 4.049, and the p-value was 0.132, which was greater than 0.05, the null hypothesis was accepted. There was therefore insufficient evidence at the $\alpha = 0.05$ level to conclude that there were no statistically significant differences in the teachers’ attitudes based on their years of experience (Table 9).
Table 9

Kruskal-Wallis Test for the Differences in the Teachers’ Overall Attitudes Based on Years of Experience.

<table>
<thead>
<tr>
<th>Overall attitude</th>
<th>Ranks (Grouping variable)</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years of teaching experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 years or less</td>
<td>52</td>
<td>109.44</td>
</tr>
<tr>
<td></td>
<td>4–7 years</td>
<td>34</td>
<td>88.19</td>
</tr>
<tr>
<td></td>
<td>8 years or more</td>
<td>106</td>
<td>92.82</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>192</td>
<td></td>
</tr>
</tbody>
</table>

Test Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square</td>
<td>4.049</td>
</tr>
<tr>
<td>df</td>
<td>2</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.132</td>
</tr>
</tbody>
</table>

NB: There were four missing values for the variable of experience.

In addition, a Kruskal-Wallis H test (Table 10) showed that there was no statistically significant difference in the scores of the three subscales of attitudes according to years of experience: benefits of inclusion, \( \chi^2 = 5.548, p = 0.062 \); inclusive settings management, \( \chi^2 = 3.585, p = 0.167 \); and special education versus inclusive settings, \( \chi^2 = 1.595, p = 0.459 \).

However, there was a statistically significant difference in the score of the perceived ability to teach students with disabilities according to years of experience (\( \chi^2 = 7.720, p = 0.021 \)). By using Mann-Whitney U test (Appendix D), the researcher found that there was no significant differences between teachers with 3 years or less and 4–7 years’ experience (\( p = .060 \)), or between teachers with 3 years or less and those with 8 years or more (\( p = .085 \)); there was also no significant difference between teachers with 4–7 years and those with 8 years or more (\( p = .731 \)).

With regard to teachers’ attitudes to the subscales, the null hypothesis was that there would be no statistically significant differences in the teachers’ attitudes based on their years of experience. In regards to the benefits of inclusion, inclusive settings management, and special
education versus inclusive settings, because the chi-square test statistics were 5.548, 3.585, and 1.559, respectively, and the p-values were 0.062, 0.167, and 0.459, respectively, which are all greater than 0.05, the null hypothesis was accepted that there were no statistical differences in the teachers’ attitudes based on their years of experience regarding these subscales. However, for the subscale’s perceived ability to teach students with disabilities, the null hypothesis was rejected because \( \chi^2 = 7.720 \), and p-value = 0.021, which was significant. It was concluded that a statistical difference existed in the teachers’ attitudes regarding their perceived ability to teach students with disabilities.

Table 10

*Kruskal-Wallis H Test for the Differences in the Teachers’ Scores of Subscales Based on Years of Experience.*

<table>
<thead>
<tr>
<th>(Grouping variable)</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits of inclusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of teaching experiences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years or less</td>
<td>52</td>
<td>111.88</td>
</tr>
<tr>
<td>4–7 years</td>
<td>34</td>
<td>93.01</td>
</tr>
<tr>
<td>8 years or more</td>
<td>106</td>
<td>90.07</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>Inclusive settings management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years or less</td>
<td>52</td>
<td>107.79</td>
</tr>
<tr>
<td>4–7 years</td>
<td>34</td>
<td>85.69</td>
</tr>
<tr>
<td>8 years or more</td>
<td>106</td>
<td>94.43</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>Perceived ability to teach students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years or less</td>
<td>52</td>
<td>84.54</td>
</tr>
<tr>
<td>4–7 years</td>
<td>34</td>
<td>84.15</td>
</tr>
<tr>
<td>8 years or more</td>
<td>106</td>
<td>106.33</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>Special education versus inclusive settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years or less</td>
<td>52</td>
<td>104.22</td>
</tr>
<tr>
<td>4–7 years</td>
<td>34</td>
<td>90.16</td>
</tr>
<tr>
<td>8 years or more</td>
<td>106</td>
<td>94.75</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td></td>
</tr>
</tbody>
</table>

Test Statistics

<table>
<thead>
<tr>
<th>Attitude subscales</th>
<th>Benefits of inclusion</th>
<th>Inclusive settings management</th>
<th>Perceived ability to teach students with disabilities</th>
<th>Special education versus inclusive settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>5.548</td>
<td>3.585</td>
<td>7.720</td>
<td>1.559</td>
</tr>
<tr>
<td>df</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.062</td>
<td>0.167</td>
<td>0.021*</td>
<td>0.459</td>
</tr>
</tbody>
</table>

*NB: There are four missing values in the variable of experience. * Significant at level 0.05
Research Question Three:

Are there differences in the teachers’ attitudes based on the training they may or may not have received on inclusion?

The normality test (Table 1) of the independent variable in this question, whether a teacher had prior training on inclusion or not, indicated a significant result (p < 0.05) in Shapiro-Wilk (p = .039), which means the data of teachers who answered in the affirmative to this question do not follow the normal distribution. In the figures below (figures 4, 5, and 6), it is evident that there are three outliers, two of them in the group of teachers who said yes for the variable training teachers may or may not have received on inclusion (cases 141 and 156), and the final outlier in the group of those who said "No" (case 72).

As shown in Table 12, after removing the three outliers to assess whether the overall attitude variable followed a normal distribution by the variable training teachers may or may not have received on inclusion, the normality tests were statistically significant for both groups (p < 0.05). For those who said “Yes,” the Shapiro-Wilk test was .131, and the Kolmogorov-Smirnov was .200. In contrast, for those who answered “No,” the Shapiro-Wilk was .146, and the Kolmogorov-Smirnov was .200. These p-values were > .05, indicating a normal distribution. In addition, as shown in Table 13, the overall attitude value was not greatly affected (70.16) before deletion or (70.40) after deletion, so the researcher retained the outliers. Therefore, the independent samples t test was used to answer this question of the study.
Table 11

*Normality Test for the Variable of Prior Training.*

<table>
<thead>
<tr>
<th>Have you ever had any training or courses on inclusive education for students with disabilities prior to or in your service?</th>
<th>Tests of Normality</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall attitude</td>
<td>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Shapiro-Wilk</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Statistic</td>
<td>df</td>
<td>Sig.</td>
</tr>
<tr>
<td>.092</td>
<td>85</td>
<td>.075</td>
<td>.969</td>
</tr>
<tr>
<td>No</td>
<td>.064</td>
<td>110</td>
<td>.200&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>*</sup> This is a lower bound of the true significance.

<sup>a</sup> Lilliefors Significance Correction

---

*Figure 4.* Histogram of teachers with prior training.
Table 12

*Normality Test for the Variable of Prior Training after Removing Outliers.*

<table>
<thead>
<tr>
<th>Have you ever had any training or courses on inclusive education for students with disabilities prior to or in your service?</th>
<th>Tests of Normality</th>
<th></th>
<th>Tests of Normality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Yes</td>
<td>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Statistic</td>
<td>.078</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Shapiro-Wilk</td>
<td>Statistic</td>
<td>.073</td>
</tr>
</tbody>
</table>

* This is a lower bound of the true significance.

<sup>a</sup> Lilliefors Significance Correction

*Figure 5. Histogram of teachers with prior training after removing outliers.*
Figure 6. Histogram and boxplot of teachers with no prior training.

Table 13

Comparing the Means of the Overall Attitudes both Before and After Removing Outliers.

<table>
<thead>
<tr>
<th></th>
<th>Overall attitude with outliers</th>
<th>Overall attitude after removing outliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>196</td>
<td>193</td>
</tr>
<tr>
<td>Minimum</td>
<td>9.00</td>
<td>19.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>130.00</td>
<td>124.00</td>
</tr>
<tr>
<td>Mean</td>
<td>70.1582</td>
<td>70.4041</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>22.08586</td>
<td>21.12148</td>
</tr>
</tbody>
</table>
Table 14

<table>
<thead>
<tr>
<th>Overall attitude</th>
<th>Levene’s Test for Equality of Variances</th>
<th>(Grouping variable) Having training courses</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>1.834 0.177</td>
<td>Yes</td>
<td>85</td>
<td>75.47</td>
<td>20.51</td>
<td>2.929</td>
<td>0.004**</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td>No</td>
<td>110</td>
<td>66.33</td>
<td>22.43</td>
<td>2.963</td>
<td>0.003**</td>
</tr>
</tbody>
</table>

The t-test results (Table 14) indicated that teachers who had training or courses on inclusive education for students with disabilities prior to or during their service had a statistically significantly higher attitude towards the inclusion of D/hh students in regular education classrooms in Saudi Arabia (75.47 ± 20.51) compared to those who had not received any training or courses (66.33 ± 22.43). Since the Levene’s Test for Equality of Variances was not significant (F = 1.834 and Sig = 0.177), the researcher used the t and p-values of the equal variances assumed (t = 2.929, p = 0.004).

The null hypothesis of this question was that there would be no statistically significant differences in the teachers’ attitudes based on the training they may or may not have received on inclusion either before or during their service. Since the t-test results detected a significant difference (p = 0.004) between the two groups, the null hypothesis was rejected; it was concluded that there was a difference between the attitudes of teachers who had prior training on inclusion and those who had not in favor of the first group.

Research Question Four:

Are there differences between the attitudes of female teachers versus male teachers?

The normality tests (Table 15) of the independent variable in this question (gender) revealed the data were not statistically significant for males and females, indicating a normal distribution.
The Shapiro-Wilk was .075, and the Kolmogorov-Smirnov was .056 (both p > .05) for male teachers. For female educators, the Shapiro-Wilk was .826, and the Kolmogorov-Smirnov was .054 (both p > .05). Histograms showed normal distribution too (Figure 7). Therefore, it was appropriate to use the parametric test independent samples t-test to answer this question.

Table 15

Normality Test for the Variable of Gender.

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Kolmogorov-Smirnov¹</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Overall attitude Male</td>
<td>.087</td>
<td>102</td>
</tr>
<tr>
<td>attitude Female</td>
<td>.091</td>
<td>93</td>
</tr>
</tbody>
</table>

¹. Lilliefors Significance Correction

Figure 7. Histograms of both genders.
The t-test results (Table 16) indicated that there was no significant difference between male teachers’ and female teachers’ overall attitude towards the inclusion of D/hh students in regular education classrooms in Saudi Arabia ($t = 1.536, p = 0.126$).

Table 16

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>(Grouping variable) Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>Male</td>
<td>102</td>
<td>72.67</td>
<td>21.82</td>
<td>1.536</td>
<td>0.126</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>Female</td>
<td>93</td>
<td>67.85</td>
<td>21.92</td>
<td>1.536</td>
<td>0.126</td>
</tr>
</tbody>
</table>

The null hypothesis of this question was that there would be no statistical differences in the teachers’ attitudes based on gender. Since the independent samples t test was not significant for the differences in the teachers’ overall attitude according to gender ($t = 1.536, p = 0.126$), the null hypothesis was therefore accepted. It was concluded that there was no significant difference in the attitudes of male and female teachers.

Research Question Five:

Are there differences between the attitudes of teachers who have a family member with disabilities and teachers who do not?

The normality tests (Table 17) of the independent variable in this question, whether a teacher had a family member with disabilities or not, indicated that the Shapiro-Wilk test and the Kolmogorov-Smirnov test were statistically significant ($p = .036$ for Shapiro-Wilk and $p = .005$ for Kolmogorov-Smirnov) for those who said “Yes” for the independent variable showing a non-normal distribution but were not statistically significant for those who said “No,” indicating a normal distribution. Therefore, the two groups did not follow the normal distribution regarding
the variable’s overall attitude (normality violation). The boxplot (Figure 8) showed two outliers, both of them in the group of teachers who said “No” for the variable of having a family member with disabilities (cases 72 and 156). After removing these two outliers, the result did not change, and the two groups still did not follow a normal distribution. Likewise, after removing the highest outlier (case 72, value =130) and the lowest outlier (case 156, value =9), the results also did not change, indicating a normality violation. Therefore, the researcher decided to use a non-parametric test, and Mann-Whitney U was deemed appropriate to answer this question.

Table 17

Normality Test for the Variable Having a Family Member with Disabilities

<table>
<thead>
<tr>
<th></th>
<th>Tests of Normality</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do you have a family member with a disability?</td>
<td>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Shapiro-Wilk</td>
</tr>
<tr>
<td>Overall attitude</td>
<td>Yes</td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.148</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>.057</td>
<td>142</td>
</tr>
</tbody>
</table>

<sup>a</sup> Lilliefors Significance Correction

* This is a lower bound of the true significance.

Figure 8. Boxplot of variable having family member with a disability
Table 18

*Mann-Whitney U Test for the Differences between the Attitudes of Teachers Who Have a Family Member with Disabilities and Teachers Who Do Not.*

<table>
<thead>
<tr>
<th>(Grouping variable)</th>
<th>Ranks</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean Rank</td>
<td>Sum of Ranks</td>
</tr>
<tr>
<td>Do you have a family member with a disability?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54</td>
<td>107.77</td>
<td>5819.50</td>
</tr>
<tr>
<td>No</td>
<td>142</td>
<td>94.98</td>
<td>13486.50</td>
</tr>
<tr>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Test Statistics*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Mann-Whitney U</em></td>
<td>3333.500</td>
</tr>
<tr>
<td><em>Wilcoxon W</em></td>
<td>13486.500</td>
</tr>
<tr>
<td><em>Z</em></td>
<td>1.411</td>
</tr>
<tr>
<td><em>Sig.</em></td>
<td>0.158</td>
</tr>
</tbody>
</table>

As shown in Table 18, the Mann-Whitney U test revealed that \( p = 0.158 \), which means there were no significant differences in the overall attitude between teachers with a family member with disabilities and teachers who without. The null hypothesis of this question was that there would be no statistical differences between the attitudes of teachers who have a family member with disabilities and teachers who do not. Since the Mann-Whitney U test was not significant \( (p > .05) \), the null hypothesis was accepted, and it was concluded that there was no significant difference in the attitudes of teachers who have a family member with disabilities and teachers who do not.

*Research Question Six:*

*Are there differences in the teachers’ attitudes based on whether they have worked with a student with a disability before or not?*

The normality tests (Table 19) of the independent variable in this question, whether a teacher has worked with a student with a disability before or not, indicated non-significant results \( \text{Kolmogorov-Smirnov} = .200 \), and \( \text{Shapiro-Wilk} = .416 \) for teachers who answered
“Yes.” However, there was a significant result for the Kolmogorov-Smirnov test (p = .007) for teachers who answered “No.” Because the Shapiro-Wilk was not significant (p = .119) and is considered more sensitive and therefore more appropriate for small sample sizes (200 participants) (Hinkle et al., 2003), the researcher decided to use the parametric test independent samples t test to answer this question.

Table 19

Normality Test for the Variable of Whether Teachers Have Worked with Students with Disabilities Before.

<table>
<thead>
<tr>
<th>Have you ever worked with students with disabilities in public school?</th>
<th>Tests of Normality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kolmogorov-Smirnov</td>
<td>Shapiro-Wilk</td>
</tr>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Overall attitude Yes</td>
<td>.073</td>
<td>101</td>
</tr>
<tr>
<td>No</td>
<td>.110</td>
<td>95</td>
</tr>
</tbody>
</table>

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The results of the t test (Table 20) indicated that teachers who had previously worked with a student with a disability had a statistically significantly higher attitude towards the inclusion of D/hh students in regular education classrooms in Saudi Arabia (73.66 ± 21.99) compared to those who had never worked with a student with disability before (66.43 ± 21.68). Since the Levene’s Test for Equality of Variances was not significant (F = 0.015 and Sig = 0.904), the researcher used the t and p-value of the equal variances assumed.
Table 20

*Independent Samples T-Test for the Difference Based on Prior Work with Students with Disabilities*

<table>
<thead>
<tr>
<th>Equal variances assumed</th>
<th>Levene’s Test for Equality of Variances</th>
<th>(Grouping variable) Work with a student with disability</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>t value</td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>0.015</td>
<td>.904</td>
<td>Yes</td>
<td>105</td>
<td>73.66</td>
<td>21.99</td>
<td>2.317</td>
<td>0.022*</td>
</tr>
<tr>
<td>0.015</td>
<td>.904</td>
<td>No</td>
<td>95</td>
<td>66.43</td>
<td>21.68</td>
<td>2.318</td>
<td>0.022*</td>
</tr>
</tbody>
</table>

NB: There is one missing value in the grouping variable. * Significance level: 0.05

The null hypothesis of this question was that there would be no statistically significant differences in the teachers’ attitudes based on whether they had previously worked with a student with a disability or not. Since the independent samples t test was significant (t = 2.317, p = 0.022), the null hypothesis was therefore rejected. It was concluded that there was a significant difference in the attitudes of teachers who had previously worked with a student with a disability and teachers who had never worked with these types of students.

*Research Question Seven:*

*Are there differences between the attitudes of regular education teachers and special education teachers?*

The normality tests (Table 21) of the independent variable in this question (background area of education) indicated non-significant results for the Shapiro-Wilk results (p = .110 for deaf education and p = .217 for general education; both p > .05). The Shapiro-Wilk is more sensitive than the Kolmogorov-Smirnov and is also more appropriate for small sample sizes (200 participants) (Hinkle et al., 2003). Thus, the researcher decided to use the parametric test independent samples t-test to answer this question.
Tests of Normality

<table>
<thead>
<tr>
<th>Area of education</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf education</td>
<td>.108</td>
<td>88</td>
</tr>
<tr>
<td>attitude</td>
<td>.063</td>
<td>106</td>
</tr>
</tbody>
</table>

* This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The results of the independent samples t test (Table 22) revealed that there was no significant difference (p = .105) between regular education teachers’ and special education teachers’ overall attitudes towards the inclusion of D/hh students in regular education classrooms in Saudi Arabia. Because the Levene’s Test for Equality of Variances was not significant (F = 0.161 and Sig = 0.688), we used the t and p-value of the equal variances assumed.

Table 22

Independent Samples T-Test Based on Area of Education.

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>(Grouping variable) Area of education</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.161</td>
<td>Regular education</td>
<td>88</td>
<td>73.26</td>
<td>22.79</td>
<td>1.629</td>
<td>0.105</td>
</tr>
<tr>
<td></td>
<td>Special education</td>
<td>106</td>
<td>68.12</td>
<td>21.09</td>
<td>1.617</td>
<td>0.108</td>
</tr>
</tbody>
</table>

NB: There are two missing values in the grouping variable.

The null hypothesis of this question was that there would be no statistical differences between the attitudes of regular education teachers and special education teachers. Since the independent samples t test was not significant for the differences between the attitudes of regular education teachers and special education teachers (p > 0.05), the null hypothesis was accepted. It
was concluded that the attitudes of regular education teachers and special education teachers were not different.

**Analysis of Open-ended Questions**

In this section of the survey, respondents were asked to freely express their feelings, thoughts, and comments regarding teaching D/hh students in regular classrooms. The objective of this open-ended question was to obtain additional in-depth information that may help the researcher to understand the quantitative data and also to find suggestions for future research. Therefore, the researcher conducted a content analysis and theme coding. For the analysis, the researcher followed the procedures that were described by Mayring (2014), which he first identified similarities and common themes in the responses. Second, he separated each response into statements. Third, frequencies and percentages were calculated for each statement. Fourth, the statements were listed from the most frequent to the least frequent, and similar statements were finally grouped by major themes. For instance, one response was “The regular curriculum is not appropriate for D/hh students. It is too difficult for them. We also need to learn sign language to communicate with the students, and the number of students in each classroom should be decreased so we can pay more attention to students with special needs.” This comment was divided into three statements: a) the need for a modified curriculum, the need to learn sign language, and c) the number of students in the classroom.

It is worth noting that 177 (90%) participants answered the open-ended question. The other participants either did not answer the question or wrote comments like “good luck” or “great survey,” which the researcher excluded from the analysis.
Seven major themes emerged from the content analysis and theme coding: 1) communication methods, 2) preparing the school environment, 3) curriculum and teaching strategies, 4) lack of professional training, and 5) changing the attitudes toward inclusion. The following section discusses these five themes in more detail.

**Theme One: Communication Methods**

For the first theme, 34% (n=68) of the survey sample indicated their concerns about communication between the teachers, hearing students, and D/hh students in inclusive classrooms. For instance, 63 participants stated that there was a need to learn sign language. This was the most frequent statement. The comments did not refer to regular teachers only but also to teachers who had deaf education backgrounds, to hearing peers, and to other school personnel. The participants thought that sign language should be part of the culture and should therefore appear in school activities; thus, everyone should acquire at least a basic level of sign language. In addition, to learn sign language, one participant wrote, “*Schools need to hire interpreters to assist D/hh students to communicate in regular schools.*” Three respondents stated that there was a need for some sort of communication method but did not name any particular method of communication.

**Theme Two: Preparing the Environment**

For the second theme, 36% (n=71) of the survey sample believed the current school environment was not appropriate to include D/hh students yet and added there was a need to improve the environment before full inclusion takes place. For example, 24 participants clearly stated, “*The current physical environment is not ready to accept D/hh students.*” Similarly, 19 participants commented that the classroom should be prepared with assistive technology, visual
signs, microphones, and other equipment that facilitates learning experiences for D/hh students; one participant mentioned the importance of providing D/hh students with hearing aids. Furthermore, 25 respondents said the number of students in regular classes was high, which makes it very difficult for teachers to pay attention to the individual needs of their students. The inclusion of D/hh students in the current classrooms will make the task even harder and will put their learning at risk. They suggested fewer students must be placed in each classroom, and one participant commented on the ratio of D/hh students to their hearing peers in regular classes.

**Theme Three: Curriculum and Teaching Strategies**

For the third theme, nearly 30% (n=58) of the survey sample believed that neither the current curriculum (both special education and regular curricula) nor teaching strategies were appropriate for D/hh students. For example, 40 participants stated, “The curriculum is not appropriate, and D/hh students need a better modified curriculum that meets their special needs.” Along with training regular teachers to work with this special population, this was the second most frequent statement in the list, making 20% of the total sample. Furthermore, 13 participants thought that teaching D/hh students required special teaching strategies that are more sophisticated than the traditional methods that are being used currently. The respondents insisted that special education teachers should collaborate with regular education teachers in the same classrooms. This collaborative teaching would facilitate the learning experience by combining the content expertise provided by the regular education teachers with the special education expertise offered by the D/hh teachers. Other statements in this theme included the following: “The length of instruction time needs to be increased to cover more academic content” (four participants), and “Where a D/hh student is seated in the classroom will impact his/her learning experience” (one participant).
Theme Four: Lack of Professional Training

For the fourth theme, 31% (n=61) of the survey sample expressed a shortage either in the number of qualified teachers or in the training opportunity for teachers in service. To give an illustration, 40 participants stated teachers with regular education backgrounds needed extensive training before they could start working with D/hh students in regular classrooms. Similarly, 11 participants indicated a need for more deaf education teachers who are qualified to teach D/hh students in the regular schools. One participant stated that at least one teacher with a D/hh education background should be present in each inclusive classroom. Additionally, four participants requested extra training opportunities for special education and D/hh education teachers, and another four participants thought that the current D/hh education teachers were not competent enough to work in inclusive settings. Finally, one participant commented on the unnecessary tasks that school administrators give to teachers of the D/hh to be completed outside the classroom, which makes the teachers to become overwhelmed and therefore leaves them with less time and energy to work inside the classrooms.

Theme Five: Shifting the Attitudes toward Inclusion

For the fifth theme, nearly 41% (n=81) of the survey sample questioned the readiness of D/hh students to attend and learn in regular classrooms, discussed the importance of shifting negative attitudes toward inclusion before it takes place, or commented on the outcomes of including D/hh students in regular classrooms. It seemed that those participants had negative attitudes toward teaching D/hh in regular classroom, and thus it may be so vital to work in changing their attitudes to be more positive. Here are examples of those participants’ who questioned the readiness of D/hh students to attend and learn in regular classrooms: “D/hh students need to learn in separate, special classrooms” (nine participants); “Hard of hearing
students may be able to learn in regular classrooms, but not the profoundly deaf students” (nine participants); “Partial inclusion in school activities either before or after classes and during recess is better, but not during the instruction time” (eight participants); “D/hh students need special care” (two participants); “The success of inclusion depends on the level of hearing loss” (one participant); “D/hh students need to acquire basic skills in special classes first, then move to inclusive settings in third or fourth grade” (two participants); “D/hh students do not want to attend inclusive settings” (one participant); and “D/hh students must learn personal and self-independence skills before they go to regular classrooms” (one participant). In addition, here are examples of participants who discussed the importance of shifting negative attitudes toward inclusion before it takes place: “Families—of both hearing and D/hh students—will not accept or support full inclusion” (three participants), to “Hearing peers will not accept or support D/hh classmates in inclusive settings” (four participants). Other statements that fell under this theme included the following: “We need to raise the public awareness about the significance of full inclusion” (10 participants); “We need a policy that enforces full inclusion in regular schools” (three participants); “Schools need to prepare hearing students for full inclusion” (three participants); “The media must talk more about full inclusion” (one participant), and “There should be an educational TV channel dedicated to the D/hh population in general and to students in particular” (one participant). Finally, here are examples of teachers who commented on the general outcomes of inclusion: eight participants explicitly wrote, “Full inclusion will cause negative effects, academically and socially, on D/hh students.” In contrast, seven participants believed that “full inclusion will have psychological and emotional effects on D/hh students”; these participants referred to the effects with a positive tone. In addition, six participants thought that extensive preparation should be conducted to ensure positive outcomes.
This preparation covers all aspects in education including but not limited to the physical environment, educational policy, teachers’ qualifications, curriculum, and attitudes. The comprehensive nature of these statements resulted in placing them under this theme. Finally, two participants wrote, “Full inclusion is not practical,” which indicated skepticism about the outcomes of including D/hh students in regular classrooms.

Summary

In this chapter, the researcher presented the findings of the current study. Both descriptive and inferential statistics were reported alongside content analysis and theme coding for the open-ended question. The researcher selected both parametric and non-parametric tests to address the research questions. The decision of each selection relied on meeting the assumptions of each independent variable in order to obtain the most accurate outcomes. The results showed that teachers in Saudi Arabia had slightly negative attitudes toward teaching D/hh students in regular education classrooms. While the teachers demonstrated positive attitudes toward the benefits of inclusion to assist D/hh students to progress academically and socially, they showed negative attitudes related to their confidence in their ability to teach D/hh students. In addition, with regard to the influence of the independent variables on the attitudes of the teachers, the results showed that only prior training that teachers had received about inclusion and their prior experience teaching students with disabilities had significant differences and affected the teachers’ attitudes. Other variables, including area of education, gender, length of teaching experience, and having a family member with a disability, did not affect teachers’ attitudes toward teaching D/hh in regular education classrooms in Saudi Arabia. Finally, a content analysis of the open-ended question revealed seven major themes that teachers stated in their comments. These themes were communication methods, preparing the environment, curriculum
and teaching strategies, lack of professional training, readiness of D/hh students for inclusion, shifting attitudes toward inclusion, and outcomes of full inclusion. These results will be discussed in detail in the next chapter.
CHAPTER 5
DISCUSSION AND CONCLUSION

In November 2015, the Ministry of Education in Saudi Arabia announced the Comprehensive Learning Project (Ministry of Education, 2015). This project refers to what is known worldwide as “full inclusion,” which means “All students with disabilities are placed in their neighborhood schools in regular education classrooms for the entire day; regular education teachers have the primary responsibility for students with disabilities” (Hallahan et al., 2009, p. 53). The attempt to include students with special needs in regular education schools in Saudi Arabia is not recent. In fact, it began in 1984 (Al-Mousa, 2010). However, previous efforts during the last three decades have been rather partial, in which students with moderate to severe disabilities only attend special classes at regular schools. In contrast, the goal of a comprehensive learning campaign is to implement “full inclusion,” and all students, both with and without special needs, are expected to learn in the same classroom.

The purpose of the current study was to investigate teachers’ attitudes toward the full inclusion of D/hh students in regular education classrooms in Saudi Arabia. The study also attempted to examine the influence of some variables on the attitudes of the teachers. These variables included the teaching position, which refers to whether the respondent is a special education teacher or a regular education teacher; training on inclusion concepts and practices the teachers had either before or during their teaching; years of teaching experience; previous experience teaching a student with a disability; teachers’ gender; and having a family member with a disability. The study utilized a quantitative descriptive research design in the form of a survey to collect data from the teachers. The survey consisted of three parts: A) demographic information, B) 25 questions using a Likert scale, and C) an open-ended question.
In order to achieve the purpose of the present study, the researcher proposed seven questions:

1) What are the overall attitudes of Saudi general and special education teachers towards including D/hh students in regular education classrooms?

2) Are there differences in the teachers’ attitudes based on their years of teaching experience?

3) Are there differences in the teachers’ attitudes based on the training they may or may not have received on inclusion before or during their service?

4) Are there differences between the attitudes of female teachers versus male teachers?

5) Are there differences between the attitudes of teachers who have a family member with a disability and teachers who do not?

6) Are there differences between the attitudes of regular education teachers and special education teachers?

7) Are there differences in the teachers’ attitudes based on their prior experience teaching students with disabilities?

This chapter, therefore, discusses the findings of the present study in light of the relevant literature, offers practical implications, suggests recommendations, proposes future research, and finally draws conclusions.

Discussion

The first question in the present study examined the overall attitudes of teachers toward the full inclusion of D/hh students. The researcher employed descriptive statistics in the form of frequencies and percentages of all statements in the questionnaire as described in detail in
Chapter 4 in order to address the questions. The first findings of the present study, therefore, indicated that teachers who participated in the present study had slightly negative attitudes toward teaching D/hh students in regular education classrooms. The overall mean of the entire sample was 70.2, and this number reflects slightly negative attitudes (Antonak & Larrivee, 1995). A thorough analysis and examination of the responses reveals some explanations of this negative result. Teachers who participated in the current study responded to questions that covered four factors: 1) The benefits of inclusion, 2) Inclusive classroom management, 3) Perceived ability to teach students with disabilities, and 4) Special versus inclusive regular education. The fourth factor, in particular, provides details that may help understand the results.

When the participants were asked whether they thought D/hh students could best be served in a public school, more than half (53%) of the participants agreed with this statement. On the other hand, when the respondents were asked whether they believed that teaching D/hh students is better done by special education teachers instead of general classroom teachers, almost the entire sample (91%) agreed. This shows that although many teachers believed regular education could be the best place for D/hh students, nearly all teachers thought special education teachers should be primarily responsible for the education of D/hh students. Similarly, when the participants were asked whether D/hh students would develop academic skills more rapidly in a public school than in a special school, 57% agreed, but 43% did not. In contrast, the majority (88%) of the sample responded that the inclusion of D/hh students will require significant changes in public school procedures. Furthermore, the same pattern could be noted in the responses to the first factor (benefits of inclusion) and the third one (perceived ability to teach students with disabilities) in which the participants showed high agreement with the benefits of inclusion but low agreement with their ability to teach students with disabilities. In other words, teachers
demonstrated slightly positive attitudes towards the principles and benefits of inclusion, but they thought the implementation of inclusion would require great effort and much time for training and preparation. Therefore, the slightly negative attitudes shown in the findings may not indicate that the teachers were against full inclusion, but it may suggest that they held concerns and doubted their ability as well as the ability of regular schools to educate D/hh students. This finding is consistent with previous research that investigated the attitudes of teachers who taught D/hh in Saudi Arabia (Al Shahrani, 2014; Alothman, 2014; Alzaid, 2012), but it differed from the national comprehensive study that resulted in more positive attitudes (AlMousa et al., 2008).

In general, teachers tended to hold positive attitudes for the concepts and benefits of inclusion but negative attitudes at the implementation level (AlQuraini, 2011; Avramidis et al., 2000; D’Alonzo et al., 1997; Khochen & Radford, 2012; Olinger, 2013). The answers to the open-ended question also provided more evidence that supported the notion that teachers are positive about the concepts of inclusion but rather negative about its practice. The three most frequent statements in the open-ended question were the need to learn sign language, more training for regular education teachers, and the need for a better-modified curriculum. These three statements showed the teachers’ concerns about their ability to teach D/hh students. With this in mind, concerns about the teachers’ ability, skills, training, and experience that are essential to teach students with special needs was considered one of the top factors that influences teachers’ attitudes toward inclusion (Larrivee & Cook, 1979).

The level or degree of hearing loss may provide another explanation for the negative attitudes presented in the current study. AlShahrani (2014) studied teachers’ attitudes of teaching D/hh students in regular education classroom in Jeddah, Saudi Arabia, and concluded that the participants held positive attitudes toward including hard of hearing students in regular
schools but less favorable attitudes toward including deaf students. Some of the answers to the open-ended question in the present study supported this conclusion. Teachers may think that hard of hearing students can learn in regular classrooms with the help of hearing aids, but they perceive that it will be very difficult for profoundly deaf students to learn in regular classrooms, especially in the absence of a good method of communication, such as sign language. In addition, when the attitudes of teachers who taught students with mild learning disabilities in Saudi Arabia were investigated, the results generally showed a positive attitude (Al-Ahmadi, 2009). In contrast, when the attitudes of teachers in Saudi Arabia who taught students with severe disabilities were investigated, the results revealed negative attitudes toward inclusion (Alquraini, 2011). The correlation between the level of disability and the negative attitudes toward inclusion was documented in the literature (Scruggs & Mastropieri, 1996). As a result, the participants may have indicated negative attitudes because they thought inclusion was not practical for deaf students, as two respondents wrote in their comments, or that students with mild to moderate hearing loss can be included with hearing aids, but not the students with severe to profound hearing loss, as another nine participants responded.

A third possible justification for the negative attitudes may be that while teachers believed D/hh students should attend regular education schools, the inclusion should be in regards to non-curricular activities (such as morning programs, recess, school excursions, arts, and sports) rather than for instructional time. In other words, according to the participants, the best educational option for D/hh students is a special classroom located in the regular education schools. As mentioned above, nearly the entire sample (91%) of the current study believed that the teaching of D/hh students should be handled by special education teachers. Similarly, 91% of the respondents reported that regular education teachers do not have sufficient training to
teach D/hh students, and 88% thought regular education teachers do not have the essential skills to work with D/hh students in regular education classrooms. Consequently, teachers may perceive inclusion to be the attendance of these students of special classes inside regular schools, which has taken place during the last three decades in Saudi Arabia. The Saudi experience of inclusion may have influenced how teachers view inclusion; when the participants were asked about full inclusion, they revealed unfavorable views. Eriks-Brophy and Whittingham (2013) examined teachers’ attitudes towards inclusion and their experience of teaching D/hh students in regular classrooms, and these researchers concluded that the majority (80%) of teachers believed that regular education classrooms were an appropriate educational option for most D/hh students. The teachers also showed high confidence in their ability and knowledge to teach students with hearing loss and were satisfied with the support they received from the school. The findings of Eriks-Brophy and Whittingham (2013) may suggest that if the teachers who participated in the current study had the opportunity to work in inclusive settings, their attitudes may change from less favorable to more favorable. Half of the participants in the present study actually had worked with students with disabilities before, but most of them (66%) were special education teachers who might have worked in special classrooms in the regular schools rather than working with D/hh in regular classrooms.

We may speculate that it is human nature to fear the unknown; thus, teachers, even those with previous experience, may harbor negative attitudes because they have never actually experienced full inclusion. For example, regular education teachers who have never worked with D/hh students may think that such students would require more attention and may even demonstrate behavioral problems. A study found that regular education teachers indicated less willingness to teach D/hh students because they feared those students with hearing loss will
cause more disruptive behaviors (Vermeulen et al., 2012). The finding of the current study supported this conclusion, as 68% of the respondents agreed that D/hh students were likely to cause more behavioral problems in regular classrooms, and 70% agreed that D/hh students would require extra attention that will be to the detriment of the other students. Although this finding reflects a slightly negative attitude, it is still critical to consider these potential explanations when we interpret the results.

The second finding of the current study corresponded to the second question, which was: Are there differences in the teachers’ attitudes based on their years of teaching experience? The results indicated that there were no significant differences between the groups, which meant the years of experience did not affect the teachers’ attitude. This finding is consistent with several studies that could not identify a significant correlation between years of experience and the teachers’ attitudes (Heiman, 2001; Koay et al., 2006; Logan & Wimer, 2013; Parasuram, 2006). Some studies have concluded that the longer teachers spend in teaching, the more positive views they develop toward inclusion (Dupoux et al., 2005; LeRoy & Simpson, 1996; Prakash, 2012; Saloviita & Takala, 2010; Villa et al., 1996). On the other hand, other studies have found a negative correlation between years of experience and attitude toward inclusion, in which younger teachers with fewer years of teaching experience exhibited a more favorable attitude toward inclusion (Avramidis et al., 2000; Bhatnagar & Das, 2013; Brady & Woolfson, 2008; Cornoldi et al., 1998; Dukmak, 2013; Kalyva et al., 2007). This inconclusive evidence from the literature may suggest that the factor of length of teaching experience is not a strong variable and does not influence teachers’ attitudes on its own. In other words, years of experience only affect teachers’ attitudes in combination with other factors, such as a lack of training or an absence of administrative support. The teachers who participated in the present study showed similar
attitudes towards inclusion regardless of how many years they had in the profession. This trend indicates a need to provide training programs for all teachers. Even new teachers who have recently graduated from college still need programs to improve their knowledge and skills regarding inclusive education as much as older teachers. Furthermore, schools that offer preparation programs for pre-teachers need to reevaluate their current plans. It seems that they do not currently offer adequate courses about inclusion. Teachers think their training programs may not be sufficient to prepare them for inclusive education (Eriks-Brophy & Whittingham, 2013). The literature indicated that the more knowledge and skills teachers learn in college, the more comfortable and accepting they will become toward inclusion during their service (Koutrouba et al., 2006; Larrivee & Cook, 1979). The education programs offered in schools play a significant role in providing teachers with such knowledge and skills regarding inclusion and have a vast impact on changing their attitudes from positive to negative (Sosu et al., 2010).

The third finding of the present study was related to the third question: Are there differences in the teachers’ attitudes based on the training they may or may have not received on inclusion? The statistical tests revealed a significant difference between the attitudes of teachers who have received training about inclusion and those who have not. Teachers who had any training, whether it was courses in pre-teaching programs or workshops during their service, showed more positive attitudes than their counterparts who had never taken any courses or training programs that taught them about inclusive education. This finding supported the idea that teachers who were satisfied with their training programs and who had the opportunity to take courses or attend programs related to inclusion were more prepared to work in an inclusive environment and held positive perceptions toward inclusion (Koutrouba et al., 2006; Larrivee & Cook, 1979). The literature provided evidence that in-service training programs offered to
teachers changed their attitudes from less favorable to more favorable (Dickens-Smith, 1995). In addition, four-year bachelor education programs that contain classes and courses that address inclusive education result in better perceptions toward inclusion (Sosu et al., 2010). In other words, the more training teachers receive, whether during their service or in their preparation programs, the higher positive attitudes they will have toward inclusion (Avramidis & Kalyva, 2007). As a result, it is important that the Ministry of Education in Saudi Arabia plans training programs for teachers who are currently in service, and universities and colleges that offer bachelor’s degrees in both regular and special education should add more courses in their current degree plans to ensure that students acquire essential knowledge and skills to be more capable of working in inclusive settings.

The fourth finding of the present study corresponded to the question: Are there differences in teachers’ attitudes toward inclusion based on gender? The statistical tests showed there were no significant differences between female and male teachers. This finding is consistent with several studies that concluded the gender of teachers did not have an impact on their attitude toward inclusion (Avramidis et al., 2000; Cornoldi et al., 1998; Logan & Wimer, 2013; Parasuram, 2006; Scruggs & Mastropieri, 1996). In Saudi Arabia, there are female-only schools where all students, staff, and teachers are female, and similar schools for males only. The preparation and in-service training programs offered to teachers of both genders are very similar, which may explain the similar attitudes reported in the current study. However, the wealth of literature that has investigated the influence of teachers’ gender on their attitudes indicated different results. While some studies have found that male teachers held higher attitudes towards inclusion than female teachers (Al-Ahmadi, 2009; Alquraini, 2011; Bhatnagar & Das, 2013; Dukmak, 2013; Ernst & Rogers, 2009; Jobe et al., 1996), other studies have
concluded that female teachers were more positive than male teachers (Alghazo & Gaad, 2004; Harvey, 1985; Leyser, & Tappendorf, 2001; Pearman et al., 1992; Prakash, 2012). It seems that gender by itself was not a strong enough variable, and thus the effort of Saudi agencies to promote inclusive education should include all teachers and schools regardless of the gender.

The fifth finding of the present study corresponded to the question: Are there differences between the attitudes of teachers who have a family member with a disability and teachers who do not? The results of statistical tests did not show a significant difference between the attitudes of teachers with a family member with a disability and those who did not. This result is consistent with two other Saudi studies (Al-Ahmadi, 2009; Alquraini, 2011) and other international studies (Bhatnagar & Das, 2013; Parasuram, 2006). It seems this variable was not a strong factor that affects teachers’ attitudes. One-fourth of the teachers who participated in the present study had a family member with disabilities, and it was assumed that their personal relationship with an individual with a disability could improve their understanding of the special needs of people with disabilities and shape positive attitude towards inclusive education (Subban, 2005). The result of the present study may suggest that Saudi teachers are over-protective and do not think a regular classroom will be appropriate for D/hh students.

The sixth finding of the present study corresponded to the question: Are there differences in the teachers’ attitudes based on whether they have worked with a student with a disability before? The statistical tests revealed a significant difference between the attitudes of teachers who have previously worked with students with disabilities and teachers who had never worked with these types of students. Teachers with past experience with students with disabilities displayed more favorable attitudes toward inclusion than their counterparts who had never taught students with disabilities. This result is consistent with another study (Whitaker, 2011) that
concluded regular education teachers who had previously worked with at least one student with a disability had higher attitudes than those who had never worked with students with disabilities. The literature suggested that teachers who had the opportunity to teach students with disabilities in inclusive settings gained valuable first-hand experience, which boosts their confidence in teaching students with disabilities in regular classrooms (Dupoux et al., 2005; LeRoy & Simpson, 1996; Prakash, 2012; Saloviita & Takala, 2010; Villa et al., 1996). Therefore, the Ministry of Education in Saudi Arabia should plan programs for all teachers. The goal of such programs is to enrich their experience by allowing the teachers to visit inclusive classrooms and observe the inclusive process. In addition, different teaching strategies should be implemented, such as collaborative teaching, to help teachers with no prior experience in an inclusive setting to work in the same classroom with teachers who do have such experience. Collaboration will facilitate the inclusive process and eliminate teachers’ concern about their ability to teach students with disabilities. Furthermore, teachers have an enormous influence on the attitudes of their colleagues, and those with positive attitudes could help other teachers and school personnel to gain positive attitudes (Dupoux et al., 2005).

The last finding of the present study was related to the question: Are there differences between the attitudes of regular education teachers and special education teachers? The results of the statistical tests did not show a significant difference between the attitudes of special education teachers and those of regular education teachers. This finding is different from many studies that have reported special education teachers had more positive attitudes than regular education teachers (Al-Ahmadi, 2009; Bruster, 2014; Elhoweris & Alsheikh, 2006; Richard & Roger, 2001; Scruggs & Mastropieri, 1996). These studies suggested that special education teachers had likely taken courses about inclusion in their pre-teaching programs, and they had
also learned more teaching strategies and knew their responsibilities in the classroom, which all resulted in positive attitudes. Therefore, the findings of the present study raise a large question about the proficiency of the current teacher preparation programs in Saudi universities. Special education teachers are required to learn about inclusive education, and this should change their attitude to be more positive. The literature offered an explanation for the negative attitudes of special education teachers toward inclusion. It was suggested that prior experience had a greater influence on the teacher’s attitude than his/her teaching position. Teachers who had a positive experience in inclusive settings would have positive attitudes, while those who had negative experiences would have negative attitudes (Alquraini, 2011; Cornoldi et al., 1998; Dupoux et al., 2005; Villa et al., 1996). As a result, it is possible that teachers with a special education background had gained positive experiences in separate classrooms and thus doubted their ability to work in regular classrooms, or they may doubt the ability of regular teachers to teach D/hh students without the appropriate training. In addition, special education teachers could have faced many difficulties in teaching students with disabilities in special classrooms because of the lack of support from school administration; hence, they may think it will be more difficult to teach students with disabilities in regular classrooms. This claim was supported by the results of Hanafe (2009) who found that regular education teachers had more positive attitudes toward inclusion than teachers of D/hh students in Saudi Arabia. Consequently, it is very critical that schools create a supportive environment that encourages special education and regular education teachers to collaborate and improve their knowledge and skills. This practice will increase the positive attitudes in schools and will advance the implementation of inclusive education.

To summarize these findings, the overall attitudes of teachers towards inclusion were slightly negative. The independent variables of the teachers’ position, gender, having a family
member with a disability, and length of teaching experience did not impact the teachers’ attitudes toward inclusion. In contrast, prior training and previous work with students with disabilities were strong factors that influenced teachers’ attitudes toward teaching D/hh students in regular classrooms in Saudi Arabia. The open-ended question resulted in seven major themes, which will be considered in the next section.

**Conclusion and Implications for Practice**

In this section, the researcher presents implications that are drawn from the findings of the current study in accordance with the relevant literature. These implications should be considered by the Ministry of Education in Saudi Arabia, policy makers, researchers, and other stakeholders if they wish to improve the movement towards inclusive education of D/hh in Saudi Arabia.

**Definition of Inclusion**

It is critical to note that there is no one definition of inclusion that is agreed upon worldwide (Odom & Diamond, 1998). However, recent literature has utilized the term “inclusive education” to refer to teaching all students, regardless of their needs or backgrounds, using a regular curriculum in the regular classrooms (Hallahan et al., 2009). Educators in Saudi Arabia have been following what other educators are doing around the globe, although they were a little behind in updating both the terminology and policy. To illustrate this, the Arabic word that has been used in the Saudi literature for the last three decades to describe the option of teaching students with special needs in regular education schools is “دمج,” which is pronounced “Damj.” The literal translation of that word is to merge, integrate, combine, consolidate, etc. When Saudi researchers publish their work in English, they have used the term “mainstreaming”
even in the most recent literature. Mainstreaming as an educational practice was widely implemented in the 1980s and 1990s. Inclusive education, on the other hand, was introduced as an educational practice in the late 1990s (Osgood, 2005). As a result, there was a gap between the creation of the term and the actual practice of that term in Saudi Arabia. When the Ministry of Education announced a new campaign in 2015 to improve the special education services for students with special needs, they used a new term, “comprehensive learning,” to describe inclusive education because inclusive education has been used interchangeably with “mainstreaming” to describe the partial inclusion in which students with special needs learn in special classrooms inside regular schools. In other words, educators in Saudi Arabia have been blending the terminologies, and the precise definition of inclusive education, therefore, was lost. It is vital that the Ministry of Education, policy makers, and other stakeholders in Saudi Arabia come together and define “inclusive education” in a way that truly reflects the actual practice of teaching all students, regardless of their needs or backgrounds, using a regular curriculum in the regular classrooms. Without a clear definition of the term “inclusive education,” it will be very difficult to raise the awareness of educators, media, and the public about full inclusion. In addition, educators and researchers in Saudi Arabia should develop their translation skills so they can interpret the true meaning of new educational terms instead of the literal translation, which in many cases does not make sense and complicates simple terms.

**Policy and Legislation**

Following the clear definition of what “inclusive education” actually means, the Ministry of Education, as the primary governmental entity that plans and manages the educational system in Saudi Arabia, should endorse legislation that puts the definition and goals of inclusive education into practice. This legislation must outline the process of including individuals with
hearing loss in regular education schools. The process should contain details of the diagnosis of the hearing loss, intervention programs, medical needs, assistive technology, related services, and educational plans. The legislation must make it clear that all students, regardless of their conditions, backgrounds, or disabilities, should attend regular classrooms in the neighborhood school and learn the regular curriculum. Such legislation should remove the confusion that is created by the ambiguous policy that is currently in place. The findings of the present study indicated that teachers still did not have a shared perspective of inclusion. Many of the teachers who participated in the study still think inclusion refers to special classes in the regular schools, and a majority of them referred to inclusion and comprehensive learning as two different practices. New legislation should address this issue and combine all terms under one definition as well as outline the responsibilities of teachers and other school personnel.

**Training and Professional Development for Teachers**

One of the major findings in the present study was the lack of training for both special education and regular education teachers. With regard to teachers who are specialized in deaf education, the number of colleges that offer training programs has increased dramatically in the last decade. This dramatic increase may have been in quantity, but it does not appear to have been in quality. In addition, the number of teachers who graduate from these programs does not necessarily reflect the true number of qualified teachers who work in public schools. Unfortunately, the process of employing teachers is very complicated in Saudi Arabia. Two major ministries collaborate to create teaching jobs. First, the Ministry of Education estimates the need for teachers according to the number of current schools, new schools, and teachers who are leaving for retirement or other reasons. These numbers are sent to the Ministry of Civil Services. Second, the Ministry of Civil Services determines how many jobs can be created for
new teachers. Many factors contribute to this decision, and in many cases, the number of jobs are far less than the actual need for educators. This gap between the available jobs and the needs creates a shortage in qualified teachers. Therefore, it becomes the school’s responsibility to fill the gap by giving teachers additional tasks that, in many cases, they are not trained to do.

On the other hand, with regard to the training of regular education teachers, the current policy does not outline the responsibility of regular education teachers in teaching students with special needs. With the new movement for comprehensive learning, the Ministry of Education must provide training programs and workshops to all teachers regarding special education and regular education to give these teachers the knowledge and skills that are essential for inclusive education. The Ministry of Education can also create a program that selects distinct teachers and sends them to the United States, Australia, and Europe for two weeks to visit inclusive schools in developed countries. It is important for these teachers to gain first-hand experience of successful models of inclusive schools and bring this experience to Saudi schools. Teachers in inclusive schools need continual training programs in order to update their knowledge and increase their skills in using creative teaching methods, integrating technology, and providing appropriate curricula and instructional accommodations for their students.

**Sign Language and Interpreters**

It is understood that language is a critical vehicle for learning. Without a language, there can be no meaningful communication, and learning might therefore be impossible. There are three primary schools or philosophies in teaching D/hh students: teach D/hh by speaking and listening, teach D/hh using sign language, or use a comprehensive method in which both spoken language and sign language are combined (Marschark & Hauser, 2012). The findings of the current study revealed an urgent need for teachers to learn sign language. There are two sign
languages in Saudi Arabia: the Saudi Sign Language, and the United Arabic sign language. The Saudi Sign Language was developed by the Deaf community in Saudi Arabia, whereas the United Arabic sign language was developed by researchers, educators, and experts in Deaf education (AlShowaier, 2013; Hanafe, n.d.). Al-Obiad (2015) stated that 95% of deaf Saudi students do not speak the Arabic language fluently because most teachers of deaf students do not have an appropriate level of sign language and therefore are unable to teach their students the spoken language. In addition, there are only 12 certified interpreters and 21 volunteers in Saudi Arabia. This means there are only 33 interpreters in the entire country, and most of them are related to deaf individuals (Alhezani, 2013). These numbers were provided by experts in deaf education in Saudi Arabia, and they support the findings of the present study. Teachers who do not possess a basic level of sign language create a huge barrier for D/hh students to communicate and learn. Consequently, teachers who work in inclusive schools need to learn sign language in order to be capable of teaching D/hh students. On the one hand, colleges must develop their training programs for teachers of deaf education by including more classes that teach sign language and imposing rigorous requirements for graduation; one of these requirements must be an advanced level of sign language. On the other hand, the Ministry of Education needs to offer programs and workshops to teach regular teachers a basic level of sign language. These programs should be offered for teachers who are willing to work with D/hh students. Teachers who participate in such workshops should be given some additional privileges or incentives to encourage more teachers to attend. In addition, there should be a rewards program to entice more people to learn sign language and work as interpreters. The role of interpreters in inclusive education is vital because they can play a key role in the communication between D/hh students and their teachers in case the teachers do not have advanced sign language skills. In other words, interpreters could
offer a solution to substitute teachers’ poor skills in sign language and provide effective communication for D/hh students in regular schools.

**Preparing the Physical Environment**

Another substantial finding of the present study that was outlined by the teachers was the suggestion to modify the physical environment to meet the special needs of D/hh students. According to the teachers, regular public schools currently do not accommodate the needs of D/hh students. Regular schools should offer more accommodations and alter their physical environments to be more welcoming and accessible for all students, including those are Deaf and hard of hearing. For example, D/hh students are often visual learners. As a result, the schools need to offer visual aids throughout the building (including sport courts, playgrounds, and the cafeteria) in general and inside classrooms in particular. There are many types of visual assistance that schools can provide, such as flashing alarm lights that could go on whenever the bell rings, posters, TVs and videos with captions, interactive networks, and smartboards with captions. The schools should be equipped with a noise reduction system and an FM system to assist students with hearing aids to hear sounds and communicate effectively. The accommodations of the physical environment should consider all details, including where a student may sit and how the desks and chairs are organized. In short, the school structure and system must eliminate all physical barriers that prevent D/hh students from communicating and interacting effectively with their peers, teachers, and other individuals in regular schools. Full inclusion aims to help D/hh students to be active participants in all school activities and events, and the first step should start with creating an environment that is safe and welcoming.
Teaching Strategies and Curriculum

Many teachers in the current study revealed their lack of ability and confidence to teach D/hh students in regular classrooms. When teachers feel confident in their knowledge and skills to teach D/hh students, they will have more favorable attitudes toward full inclusion and most likely will believe the regular classroom is the most appropriate option for the students (Eriks-Brophy & Whittingham, 2013). Teachers in inclusive schools face many challenges (e.g., the number of students, curriculum modifications, standardized tests, and students with disabilities), and thus they need to select instructional methods that best respond to classroom diversity. These methods must be validated and supported by research evidence, and they also need to be universal or differentiated in order to provide access to the general curriculum for all students.

Teachers in inclusive schools need to be learners, problem solvers, and researchers, searching for new methods and validating the evidence. The implementation of effective classroom practices and curricula adaptations will allow greater access to the general curriculum and will also boost student performance. In addition, despite the fact that collaborative teaching does not exist in most Saudi public schools, many of the teachers in the current study thought it would be very useful if two teachers worked together in the same classroom. The regular teacher would take primary responsibility for managing the classroom and teaching the entire class, while another teacher—preferably a deaf education teacher—would work on the curricula and instructional accommodations. Collaboration is a key element of successful inclusive settings, and it must take place not only between two teachers in one classroom but also between all professionals inside and outside the school.

Furthermore, traditional assessment requires large amounts of non-instructional time and does not reflect the actual progress of student performance. Students with hearing loss face an
immense risk of failure in regular classrooms because they learn the general curriculum, and its assessment typically does not accommodate their needs. Consequently, there is an urgent need to create more authentic assessment methods that meet the needs of exceptional students. Assessment in inclusive education should focus on each student’s learning progress rather than meeting curriculum-based standards. In addition to the teachers’ effort, the Ministry of Education needs to develop a curriculum that is appropriate for all students and endorse the teachers’ efforts to accommodate instructions and assessments for D/hh students.

Shifting the Attitudes and Raising Public Awareness

The present study found that teachers held slightly negative attitudes toward teaching D/hh students in regular education classrooms. Shifting the attitudes toward an issue requires leadership and initiative. Strong leadership in both vision and practice will lead all stakeholders, such as general educators, school personnel, therapists who provide related services, parents and students with or without disabilities, to be actively involved in inclusive education. This leadership can be on a lower level, such as school administrators, or a higher level, like the Ministry of Education. These leaders must show an understanding of and an enthusiasm toward inclusion and take action to put policies and laws into practice while ensuring the school environment is safe and welcoming for everyone and that full membership is granted to all students, their families, and the staff. In addition to the campaign of the Ministry of Education to improve attitudes toward inclusion, the media should also play a critical role. The language that is used in the media to describe individuals with disabilities must be changed from one of sympathy to one that uses inspiring and positive language. For example, news and TV reports should concentrate on the abilities rather than the disabilities of all individuals. In addition, governmental agencies and offices must take the lead by employing qualified people with
disabilities to show society that they are normal, just like others without disabilities. The Saudi people are overprotective in general; therefore, they need to learn that people with disabilities need opportunities, not protection. In short, people must see successful models of individuals with hearing loss who have overcome barriers and have achieved accomplishments in their lives. A TV show that brings these models into Saudi homes every night would be helpful, and an educational TV channel could also be beneficial. Finally, individuals with positive attitudes could share their experiences with people around them either in real life or using social media.

**Recommendations for Future Research**

The findings of the present study offered several recommendations for future research. First, this study investigated the attitudes of teachers because they are the first line to put policies into practice. However, it is equally important to investigate the attitudes of other stakeholders, such as school administrators, parents, D/hh students, and students without disabilities. Second, the current study utilized a quantitative methodology to examine teachers’ attitudes. Other qualitative research may offer more in-depth details about the attitudes toward inclusion. Third, the sample in the current study included 196 teachers. Research in the future may investigate the same issues with a larger sample. Fourth, the present study examined the influence of six factors on teachers’ attitudes: teachers’ educational background, gender, years of experience, prior training and courses, prior experience with students with disabilities, and having a family member with disability. Future research may examine other factors, such as class size, degree of disability, location of the school (urban versus rural), or level of the school (elementary, middle, and high school). Fifth, the current study investigated the attitudes of teachers toward deaf and hard of hearing (D/hh) students as one category. Typically, individuals with hearing loss are grouped into one category regardless of the level or the type of the hearing loss. However, the
findings of the current study supported other literature that suggests teachers have positive attitudes toward including HH students but not profoundly deaf students. Therefore, future research may investigate the attitudes toward these two groups separately. Sixth, teachers in the current study expressed a need for a modified curriculum that is appropriate for D/hh students. However, the aim of full inclusion is to teach all students the same regular curriculum. Future research could identify the type of curriculum that is appropriate for D/hh students. Seventh, the current study examined the effects of six factors on teachers’ attitudes based on previous literature that suggested these factors may influence teachers’ attitudes. The findings showed that the following factors were not strong variables: gender, teachers’ position, length of experience, and having a family member with a disability. Future research could examine these factors in relation with other variables, such as teacher collaboration or administrative support, to provide a greater understanding of the effects of these variables. Finally, it was found that prior training and prior experience with students with disabilities were strong factors that changed teachers’ attitudes towards inclusion. Future research could examine the effect size of these two factors and what type of training and experience is needed to change teachers’ attitudes toward inclusion from negative to positive.

Limitations

While the present study provided valuable information and insights that may improve the new movement to implement full inclusion in Saudi Arabia, it also had a few limitations that should be considered when interpreting the findings. First, it utilized an online survey. Teachers’ responses in an online survey could not be controlled. Therefore, while it was assumed that teachers who participated in the survey completed it with honesty and accuracy and that the sample represented the intended population, this may not be so. Second, the study was
intended to investigate teachers’ attitudes toward teaching D/hh students in regular education classrooms in Saudi Arabia. Therefore, the results cannot be generalized to students with other categories of disabilities (learning disabilities or intellectual disabilities). Third, there is lack of reliable resources and research studies in Saudi Arabia pertaining to the topic currently under investigation (inclusive education). As a result, the majority of the literature review was taken from Western literature rather than Saudi or Arabic literature. The researcher also had to cite YouTube videos and newspaper articles due to the lack of more valid resources. Fourth, the nature of the present study was quantitative. Therefore, the findings showed specific information regarding the research questions but did not provide details about the teachers’ feelings, thoughts, and concerns about the implementation of inclusion in Saudi Arabia. Finally, the selection of the statistical tests to analyze each question depended on whether the variables of that question met the test assumptions. Therefore, the researcher had to use both parametric and non-parametric tests in the study.

**Summary**

The present study was one of the very few studies that has investigated teachers’ attitudes towards teaching D/hh students in regular education classrooms in Saudi Arabia. There are only two other published works that have explored the same topic in Saudi Arabia; both studies were published in 2014 after the researcher had already started this study. The present study found that teachers in Saudi Arabia had a small negative attitude toward teaching D/hh students in regular education classrooms. This result emphasizes the urgent need for more efforts to raise awareness about the significance of teaching D/hh students in regular classrooms. The Ministry of Education cannot impose a new policy on schools without careful planning and preparation. As a result, It is critical to prepare the community as well as the school environment in order to
reap the best possible outcomes of inclusion. The study also revealed that the independent variables of prior training about inclusion and previous experience teaching students with disabilities were strong variables that influenced the teachers’ attitudes. Other variables, including the area of education, gender, length of teaching experience, and having a family member with a disability, did not seem to influence the teachers’ attitudes toward teaching D/hh students in regular education classrooms in Saudi Arabia. Considering these results, the researcher provided recommendations for all stakeholders and policy makers to help them make future plans based on research evidence.
References


http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1859&context=doctoral

Central Department of Statistics & Information (2010) Retrieved from: 


Ministry of Education. (2015). In accordance with the scientific and global standards: The Ministry of Education launched the project of comprehensive learning for special education in regular education schools. Retrieved from: 


https://www.moe.gov.sa/Arabic/Ministry/Pages/MinistryStart.aspx


Part One: General Information

Please read each of the following questions and check the appropriate choice that best describes you:

1- What is your gender?
   ☐ Male.
   ☐ Female.

2 - What is your degree area (subject area)?
   ☐ Special Education.
   ☐ General Education.

3 - How many years of teaching experiences do you have?

Please, specify _______ year(s).

4 - Have you ever had any training or courses on inclusive education for students with disabilities prior to or in your service?

   ☐ Yes       ☐ No

5 - Have you ever worked with students with any kind of disabilities in a public school setting?

   ☐ Yes       ☐ No

6 - Do you have a family member with a disability?

   ☐ Yes.     ☐ No.
**Part Two: Perspectives toward full inclusion of deaf and hard of hearing students in regular education classrooms.**

Please carefully read each of the following items and refer to what extent you agree or disagree by checking the appropriate answer:

Key:

-3: I disagree very much.        +3: I agree very much.
-2: I disagree pretty much.      +2: I agree pretty much.
-1: I disagree a little.         +1: I agree a little.

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Most deaf and hard of hearing students will make an adequate attempt to complete their assignments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Inclusion of deaf and hard of hearing students will necessitate extensive retraining of general-classroom teachers.</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Inclusion offers mixed group interaction that will foster understanding and acceptance of differences among students.</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>It is likely that the deaf and hard of hearing students will exhibit behavior problems in a public school.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Deaf and hard of hearing students can best be served in a public school. The extra attention deaf and hard of hearing students require will be to the detriment of the other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>The challenge of being in a public school will promote the academic growth of the deaf and hard of hearing students.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>Inclusion of deaf and hard of hearing students will require significant changes in public school procedures.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>8</td>
<td>Increased freedom in a public school creates too much confusion for the deaf and hard of hearing students.</td>
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<td></td>
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<tr>
<td>9</td>
<td>General-classroom teachers have the abilities necessary to work with deaf and hard of hearing students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The presence of deaf and hard of hearing students will not promote acceptance of differences on the part of students without disabilities.

The behavior of deaf and hard of hearing students will set a bad example for students without disabilities. Deaf and hard of hearing students will probably develop academic skills more rapidly in a public school than in a special school.

Inclusion of the deaf and hard of hearing students will not promote his or her social independence. It is not more difficult to maintain order in a public school that contains a deaf or hard of hearing student than in one that does not contain a deaf and hard of hearing student. Deaf and hard of hearing students will not monopolize the public school teacher's time.

The inclusion of deaf and hard of hearing students can be beneficial for students without disabilities. Deaf and hard of hearing students are likely to create confusion in a public school.

Public school teachers have sufficient training to teach deaf and hard of hearing students. Inclusion will likely have a negative effect on the emotional development of the deaf and hard of hearing students.

Deaf and hard of hearing students should be given every opportunity to function in a public school when possible. The classroom behavior of the deaf and hard of hearing students does not generally require more patience from the teacher than does the classroom behavior of the student without a disability.

Teaching deaf and hard of hearing students is better done by special education teachers instead of general classroom teachers.
Isolation in a special school has a beneficial effect on the social and emotional development of the deaf and hard of hearing students. The deaf and hard of hearing students will not be socially isolated in a public school.

Part Three: Open-ended question:

- Do you have any comments or suggestions regarding the education of deaf and hard of hearing students in a public school?
  
  …………………………………………………………………………………………………
  …………………………………………………………………………………………………
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  …………………………………………………………………………………………………

Thank you,
Appendix B
Written Permission to use ORI

Statement of Permission to Use

*Opinions Relative to the Integration of Students with Disabilities (ORI)*

I, Barbara Larrivee, hereby grant permission to use the *Opinions Relative to the Integration of Students with Disabilities (ORI)*, to:

Name: Fahad Aseery.
Institution: Ball State University
Address:

Phone no.: 7657026505.
E-mail: faaseery@bsu.edu

This permission is granted for research purposes only. If changes are made to the ORI, the citation must say “adapted from.”

There is no charge to use the survey. I am requesting that you send the results of the research in order to pool data to conduct further research on the ORI.

The above named also agrees to provide a written summary of findings including a by-item analysis. This report should be sent within 30 days of completion of the research via e-mail to blarrive@csusb.edu.

Dr. Barbara Larrivee, Professor
Department of Language, Literacy and Culture
California State University
2500 University Parkway
San Bernardino, CA 92407-2397
Appendix C

Written permission from Ministry of Education in Saudi Arabia

المملكة العربية السعودية
وزارة التربية والتعليم
الإدارة العامة للتربية والتعليم بمنطقة الرياض
إدارة التخطيط والتطوير

إذن

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<th>اسم الدارسة</th>
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<tr>
<td>L078732</td>
<td>فهد بن عبد الله عسيري</td>
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</table>

السلام عليكم ورحمة الله وبركاتكم وبعد:

طلب للدروس الموضوعة في الدورة أعلاه: إذ إنه لا يمكن لدى إدارة التخطيط والتطوير بالإدارة العامة للتربية والتعليم بمنطقة الرياض من تطبيق دراسته لـ مدينة الرياض التي هي بعنوان:

(اتجاهات وأراء المعلمين والمعلمات تجاه الدمج الشامل للطلاب الصم وضعف السمع في المدارس العامة في المملكة العربية السعودية)

(teacher's attitudes towards the inclusion of deaf and hard of hearing students in general education schools in Saudi Arabia)

والله ولي التوفيق

إدارة التخطيط والتطوير
Appendix D

Mann-Whitney U test Output

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<thead>
<tr>
<th>Ranks</th>
<th>How many years of teaching experiences do you have</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
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<tbody>
<tr>
<td>fixedscores</td>
<td>3 years or less</td>
<td>52</td>
<td>48.17</td>
<td>2505.00</td>
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<tr>
<td></td>
<td>4-7 years</td>
<td>35</td>
<td>37.80</td>
<td>1323.00</td>
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<td></td>
<td>Total</td>
<td>87</td>
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</table>

| Test Statistics*      | fixedscores                                      | Mann-Whitney U | 693.00 |
|                       |                                                 | Wilcoxon W     | 1323.00|
|                       |                                                 | Z              | -1.879 |
|                       |                                                 | Asymp. Sig. (2-tailed) | .060 |

a. Grouping Variable: How many years of teaching experiences do you have

<table>
<thead>
<tr>
<th>Ranks</th>
<th>How many years of teaching experiences do you have</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
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<td></td>
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<td>75.10</td>
<td>7961.00</td>
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<td></td>
<td>Total</td>
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Test Statistics

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<td>Mann-Whitney U</td>
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<tr>
<td>Wilcoxon W</td>
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</tr>
<tr>
<td>Z</td>
<td>-1.725</td>
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<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.085</td>
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a. Grouping Variable: How many years of teaching experiences do you have

Ranks

<table>
<thead>
<tr>
<th>How many years of teaching experiences do you have</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixedscores</td>
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<td></td>
<td></td>
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<tr>
<td>4-7 years</td>
<td>35</td>
<td>68.94</td>
<td>2413.00</td>
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<tr>
<td>8 years of more</td>
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<td>71.68</td>
<td>7598.00</td>
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</table>

Test Statistics

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<th>fixedscores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
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</tr>
<tr>
<td>Wilcoxon W</td>
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<tr>
<td>Z</td>
<td>-.344</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.731</td>
</tr>
</tbody>
</table>

a. Grouping Variable: How many years of teaching experiences do you have