

**EXPLORING BELIEFS AND TEACHING PRACTICES USING UNIVERSAL
DESIGN FOR LEARNING IN SPECIAL EDUCATION CLASSROOMS OF
SAUDI ARABIA**

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أول الحمد وتمام الشكر للمولى العظيم سبحانه.. الحمد لله على التمام، الحمد لله حمدا لا يحصى، الحمد لله حمدا طيبا.. مباركا فيه، اللهم اجعله علما نافعا.. وعملا صالحا طيبا مباركا فيه

الى معلمي الأول ومثلي وقدوتي العليا الى من غرس حب العلم في نفسي منذ ثنايا طلعتي الأولى، وأنبت شغف المعرفة بقصصه القيمة وتوجيهاته الحكيمة.. الى صانع مكتبتي ومحفزي ومرشدي الى من عرفت الدنيا من خلاله.. ولم أعرف في الدنيا مثله.. الى ابي واستقامة ظهري وعمود النور الموصول به اسمي.. الى قدوتي.. بل قوتي.. بل مسندي.. ومن عظيم خصاله من كل فضل استقي.. حسبي نعينا في حياتي أنك ابي.. الغالي الشيخ عبد الله بن صالح الوقيصي

الى صانعة النجاح ومنبع الالهام.. على يدك تتلمذت في مدرسة الحياة، فعلمتني القيم قبل امساك القلم، وزرعتي فيا الشغف قبل تعلم الحرف، علمتني ان النجاح هو بالفلاح ومواصلة السير بعد الضير، كنت ولا زلت خير قدوة دعواتك هي سلمي المتصل الى السماء، ومناجاتك هي قرباتي عند الله.. في كل مرة.. وأعظم موجه وخير مستشار اخبر وامل، تعيدني اشغال الأمل في نفسي حتى وكان الكون كله بين يدي.. ان كان لي من حبه في هذه الدنيا فهي أنك أُمِّي وان كان لي فخر فهو أنى ابنتك.. وان كان لي من تقدم ونجاح فهو بعد فضل الله تعالى جهود سهرك وتعبك وغراس يدك.. الحمد لله على والدين عظيمين حبيت بهما

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As education policy in Saudi Arabia is beginning to implement a more inclusive classroom model which educates children with and without special needs side-by-side, teachers are struggling to find the best practices that can meet the needs of students with diverse levels of learning abilities. However, the government's Saudi Vision 2030 has committed to improving educational curricula and practices, which will open doors of opportunity for inclusive education and for teachers to develop their knowledge and skills in this new area of pedagogy. This dissertation focuses on the special education teachers and their practices in inclusive classrooms in Saudi Arabia. The data was collected via a mixed method that included interviews and surveys to determine the current practices that the teachers apply in their classrooms. The dissertation then evaluated the teachers' practices against the principles of Universal Design for Learning. This study aimed to provide a guide for the Saudi special education teachers to follow based on the Universal Design for Learning framework, and is expected to inform, benefit, and contribute to the Saudi government's efforts to reform and improve inclusive teaching and learning approaches in the education system.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Background

At the beginning of every school year, teachers and students come to school with different perspectives and expectations for the school year but with common goals: to learn, to develop, and to gain and share knowledge. Many teachers are ready to meet the challenges ahead and are busy preparing educational materials to ensure that students make progress in understanding the course content. During the school year, as teachers try to determine improved ways to teach course content, they keep in mind the students' performance levels and may adapt their classroom practices as much as possible to meet every student's needs (Meo, 2008).

Like others, students with learning disabilities come to school with hopes and plans for success as school starts. However, as the school year progresses, they begin to struggle, and they reach the point when their days are filled with barriers that make learning difficult. Even as they endeavor to understand and absorb what they are being taught, they fall further behind and often must feel that the curriculum was not designed for them. This feeling can also lead to a sense of frustration, of futility, and of diminishing self-esteem.

In the field of education, some students who struggle with the regular curriculum are labeled "special". Typically, teachers and other professionals view these struggling students and categorize them as different from others and somehow - less. If they are evaluated, their strengths and weaknesses are assessed in reference to their interaction with the curriculum. In this situation, the burden of adaptation falls on the students instead of the curriculum. In other words, when educators design the curriculum and plan activities to teach it, they ensure the curriculum is standard and expect that it will lead the students to the planned outcome or educational achievement

(Meyer & Rose, 2000). However, students do not all learn in the same ways or at the same pace. Each student is unique and learns across a complex spectrum of learning styles. Therefore, a standard, one-size-fits-all curriculum will not suit all learners. Students who are not reaching the standard are considered failures whereas the true reason for a student's lack of success may more correctly be placed on the curriculum. Therefore, it could be argued that readjusting the standard approach to learning may enable the curriculum to meet the needs of all the students.

It is the case that many "regular" students in general classrooms struggle to succeed with a one-size-fits-all regular education curriculum in similar ways. Moreover, the separation of students into two groups, "regular and special," fails to accurately represent the diversity of the student learning characteristics, which cannot be categorized so simply by either their ability or inability to achieve outcomes from a standard curriculum (Rose & Meyer, 2002). Thus, to ensure learning for all students, educators need to consider the students' needs and differences and also consider the interaction between students and the educational curriculum.

In addition, educators need to consider the strengths and weaknesses of the curriculum and look for a curriculum that supports academic achievement of diverse learners. Universal Design for Learning (UDL) is an example of one framework for addressing the diversity of all students from the outset and creating a flexible curriculum that supports access, participation, and progress for all learners (Meyer & Rose, 2000; Rose & Meyer, 2002).

One of the first researches in the field of curriculum design for students with disabilities was conducted by Rose and Meyer (2002) at the Center for Applied Special Technology (CAST, 2011; Edyburn, 2010) who thought of UD from the educational point of view. They broadened the concept of UD from architecture and developed

UDL. Extending the UD concept to the inclusive learning environment, UDL aimed to provide access to learning in general education classroom settings for students with disabilities (Almumen, 2020; Griful-Freixenet et al., 2020). As more students with more significant disabilities participated in general education, the concern was about how to make the general curriculum accessible to students with a diversity of abilities. The concern about the general curriculum led to the first wave of national attention toward the UDL construct. The CAST described how UD could be utilized within education based on their ideas and other researchers in curriculum studies (Edyburn, 2010).

Some researchers have suggested that UDL is concerned mainly with the classroom environment and based on changing the design of public buildings to make them more accessible for individuals with disabilities. Others argue that UDL is more about the curriculum and teaching practices and strategies applied by teachers in the classroom, where they support the use of a variety of teaching materials to meet the different needs of a broad spectrum of student (Zhong, 2012). However, as the development of UDL progressed over time, the two sides of the argument have effectively merged into one holistic approach. The concept of UDL now encourages educators to design both the curriculum and the physical learning environment to reduce the barriers to learning and ensure accessibility for the widest range of students. Therefore, both the learning environment and curriculum structure are the focus of UDL (Lowrey et al., 2017).

Rose and Meyer (2002) were the seminal authors who published the definitive work on UDL, and that began the second wave of increasing attention toward UDL. In their book, the authors suggested educators should regard the curriculum as disabled, rather than thinking of the students as having a disability. Additionally, they explained

the focus of UDL on brain development, learning, and digital media and they presented a more detailed conceptual framework of UDL. They argued that a “one-size-fits-all” curriculum would not ensure the academic achievement of all students in an inclusive setting. Therefore, when inclusion policies promote the physical inclusion of all students the result is increased diversity of students in a classroom, whereas there remains a disconnect between students’ abilities and a “one-size-fits-all” curriculum that is the standard practice in most classrooms (Edyburn, 2010; Rose, 2001).

Special Education in Saudi Arabia

Special education services in Saudi Arabia started formally in 1960. At that time, the services were limited to individuals who were blind, deaf, or having intellectual disabilities (Aldabas, 2015). During the period from 1960 to 1971, the special education programs in Saudi Arabia expanded through the implementation of the Special Education Agency in the Ministry of Education. The initiatives by the Ministry of Education served as a door opening for the services to be made possible in schools and to be available for different categories of students with disabilities (Dimitrov & Alsadaawi, 2018). Following this initial period of early development, in 2001, the Law Number 224, Regulations of Special Education Programs and Institutes (RSEPI), was legislated by the Saudi government (Ministry of Education, 2002), which was aligned with the Individuals with Disabilities Education Act (IDEA 1990) in the United States (Dimitrov & Alsadaawi, 2018).

The new law along with the services that the Ministry of Education in Saudi Arabia established, provided a free and appropriate education for all students, including students with disabilities. The plan included the development of many new schools as well as maintaining old schools. In addition, the Ministry of education worked on improving the curricula to match the needs of the students. Moreover, the

improvements included the preparation of the teachers by establishing training programs for in-service teachers, and offering adult education literacy (Ministry of Education, 2008).

In the current Saudi education system, the special education services are available for all eligible students based on the government's emphasis on the importance of education for all citizens without discrimination. These policies have brought about significant developments toward modernizing education during the past several years (Mohammed, 2018). In this respect, the special education services in public schools have now been extended from serving only students who are blind, deaf, or having intellectual disabilities to serve students with learning disabilities, physical disabilities, students who are diagnosed with autism, and students with low vision. There are also some efforts underway to create programs for more groups based on the educational policy in Saudi Arabia, which has advanced to the degree that a wide variety of disabilities are now acknowledged. To enable these programs, the government of Saudi Arabia has invested considerable financial resources toward educational institutions and services (Aldabas, 2015; Murry & Alqahtani, 2015; (Saudi Vision 2030, 2021a)

The policies adopted by the government that advocate for special education are important to support the rights of individuals with disabilities to equal access to a quality education. However, even though these laws were passed almost a decade ago, there is still a lack of effective implementation of inclusive education in the classroom setting. This situation has created a gap between the framework of these laws and the provision of services, which is resulting in a lack of special education services or low quality of services for some students with disabilities (Alquraini, 2011). Therefore, to accomplish the aims in education of the Saudi Vision 2030, there is a need for

significant change and additional support for the education system to accommodate the goal of inclusivity. The Saudi Government's Vision 2030 is a long-term plan that focuses on reducing the country's economic reliance on oil and increasing investment in the private sector with a focus on improving the country. In particular, the plan seeks to develop innovation in public sector policy and improve or reactivate some of the policies that are not yet fully implemented, such as in the inclusive education area (Saudi Vision 2030, 2021a). Furthermore, the government sees reform of education as one of the key priority policy areas to increase the knowledge, skills, and capacities of the nation's youth through its Human Capability Development Program (HCDP). The HCDP and the overarching Vision Realization Program (VRP) will be instrumental in preparing all young people for future job markets and global citizenship through advanced education and training (Saudi Vision 2030, 2021b). In special education, one of the central issues leading to success of the inclusive classroom is the standard of qualification, training, and capacity of special education teachers who are the implementers of special education policy, curriculum, and classroom practice (CAST, 2011; Pace & Schwartz, 2008).

Thus, this study will undertake an evaluation of the current situation of the special education teachers in Saudi Arabia. Furthermore, it will assess special education practice in relation to the principles of UDL in order to connect the practice with a framework that can help the teachers to improve the educational practice and establish the highest standards of inclusive education and equity for the benefit of the diversity of students in Saudi Arabia's education system.

Introduction to this Study

The idea of classrooms being open, inclusive spaces for students of all abilities to share the learning experience together has been a major subject of debate in

education around the world (Evans & Lunt, 2002). However, much of the research that has been conducted on the topic of educating children with a wide range of abilities in one general classroom setting acknowledges that this may be an ideal objective which has yet to be fully realized (Hayes & Bulat, 2017).

In recognition of the powerful role that UDL can play in the educational mission, the aim of this study is to explore Saudi teachers' experience with inclusive classrooms in Saudi Arabia, and then assess their practices based on the guidelines of UDL. Until now, UDL has not been implemented officially in Saudi Arabia due to the difference in the education structures and practices between schools in Saudi Arabia and those in other countries, such as the US, where UDL was invented. However, the principles of UDL are universal and can be implemented based on many practices that teachers are using in their inclusive classrooms. Thus, this study aims to assess the teachers' practices based on the principles of UDL, which will produce information that will help inform education policy and decisions of curriculum designers for UDL to be officially implemented in Saudi Arabia. The focus of the study is to identify effective teaching practices in Saudi inclusive classrooms, then assess those practices based on the principles of UDL to determine if UDL principles are being applied or can be adapted in the future.

Statement of the Problem

Teachers of students with high-incidence disabilities are in need of supportive strategies and knowledge of teaching methods that can make it possible to meet the educational needs of all students (Hall et al., 2015). High incidence disabilities include autism spectrum disorders, communication disorders, intellectual disabilities, specific learning disabilities, emotional or behavioural disorders, and physical and sensory needs that affect educational opportunities for students in the classroom (Gage et al.,

2012; Griful-Freixenet et al., 2020; Lowrey et al., 2017). UDL may provide a promising way for teachers to address the diverse needs of these students with disabilities; however, in order to find a way to assist the teachers to use UDL, understanding their current teaching process is necessary. Thereafter, an assessment under the general umbrella of UDL guideline can be made.

Purpose of the Study

This study is aimed at adding to knowledge in the field of special education and supporting the global trend toward the inclusion of students with high-incidence disabilities in general education classrooms in Saudi Arabia. The objective is to study the general education teaching process in Saudi Arabia, then assess it within the framework of UDL. Finally, the study is designed to help provide guidance for teachers, curriculum designers, and policy makers to rethink the idea of inclusive education within the framework of UDL principles.

Focus of the Study

Based on the need for mixed method studies to represent or describe teachers' experiences and perspectives on the teaching practices in inclusive classrooms, the study focusses on adding new information in the body of academic literature how teachers' practices influence student learning in Saudi Arabia. The study will also provide data that describes teacher practice in inclusive settings in the country. The principles of UDL will be used to guide the analyses. Through a systematic process of survey and individual semi-structured interviews, the goal is to highlight critical insights into what teachers report to be helpful practices they implement and barriers they describe in their practices of teaching students in inclusive classrooms.

Research Questions

In this study, the focus will be on the following central questions:

- Question 1: *To what extent do Saudi teachers perceive the importance/effectiveness of UDL practices?*
- Question 2: *What are the Saudi teachers' points of view on some of the challenges that relate to inclusive classrooms?*
- Question 3: *Is there any connection between the teaching method and practice in inclusive classrooms in Saudi Arabia and the principles of UDL?*

Significance of the Study

There has been limited research in Saudi Arabia into inclusive classroom teaching practice as it relates to the concept of UDL. As there is a need for practices that help educators to create an effective inclusive classroom in Saudi Arabia, this study of the educators' practices in their inclusive classrooms can work as a model to guide the design of an improved curriculum that incorporates the principles of UDL.

Definition of Terms

Universal design for learning (UDL) is an instructional design framework that addresses learner variability by facilitating the removal of barriers in the curriculum (CAST, 2011).

Inclusive classrooms generally refer to the least restrictive teaching environment that includes educational service providers, contingent upon student strengths and needs, and involving a fundamental continuum of possible supports (Murwaski & Swanson, 2001).

Assistive technology, according to the IDEA (U.S. Department of Education, 2004), means “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability”.

High-incidence disabilities “include emotional or behavioral disorders, mild to moderate intellectual disabilities, LD (learning disabilities), speech and language impairments, and more recently based on the increasing numbers, autism can be considered a high incidence disability” (Gage et al., 2012).

A specific learning disability “is a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations” (U.S. Department of Education, 2004).

Summary

This first section has presented an introduction to the problem of classroom teaching and curriculum design not adequately accommodating the needs of all students, particularly those with learning disabilities. Furthermore, the concept of UDL has been outlined to demonstrate how school curriculum and teaching practices can better facilitate learning for students with disabilities while still serving the educational needs of all other students. While the educational system in Saudi Arabia has been undergoing fundamental improvement in consideration of the needs of all students, the principles of UDL have not yet been formally adopted within the national curriculum nor have they been implemented in the classroom setting. Thus, this research will investigate current practices in the Saudi inclusive setting and compare them with the UDL methods to identify similarities and differences that may lead to improvements in education for students with disabilities.

CHAPTER 2: REVIEW OF THE LITERATURE

The Education System in Saudi Arabia

The Kingdom of Saudi Arabia is the largest country in the Middle East and has a population of 35 million (United Nations, 2021). Economically, Saudi Arabia has relied heavily on its vast natural resources of petroleum and natural gas, which have helped the government allocate revenue to finance new projects in the non-oil sectors, including investment in education. The increased revenue available for education has had a positive effect on the development of special education programs in the country (Alnahdi, 2014). The government of Saudi Arabia greatly values education, which is reflected in the yearly budget of the country. In the Saudi Arabian budget report of 2020, the education expenditure with a budget of 193 billion is 18.9 percent of the annual budgeted expenditure. Thus, the education sector has the largest share of the annual budget expenditure (Ministry of Finance, 2021).

The Ministry of Education has undertaken numerous initiatives to improve the education sector, such as the Teaching Staff Proficiency Development project that aims to raise teaching and leadership competencies of the teaching staff and other projects that aim to improve the educational system. The Ministry of Education aims to enhance scientific research and knowledge production with the help of its specially designed initiatives to bolster community development. The Ministry of Education works accordingly based on the belief that on the back of such strong initiatives, the current gap between the need for education skills to increase productivity can be significantly reduced (Ministry of Education, 2020)

The Saudi Arabian government invests heavily in education and encourages its youth to attend schools in the public educational system by providing free education from kindergarten to high school that includes access to books, health services, and

technological equipment (Alamri, 2011; Alsharif, 2011; Onsmann, 2010). Further, the higher education students receive monthly recompense of US \$225 to US \$250 (based on the major) as encouragement for pursuing a higher degree qualification (Alamri, 2011). This reflects the government's emphasis on the importance of education to sustain the country's development. Saudi Arabia believes that a knowledge-based economy will support sustainable development and economic growth (Bashehab & Buddhapriya, 2013).

Despite the government's efforts to improve education, there is still an urgent need for educational reform in Saudi Arabia. According to Mosaad (2016), the educational system is currently struggling with "outdated school curricula, ineffective teaching methods and low education standards", which means that education is one aspect of the Saudi Vision 2030 (2021a) that will require extensive improvements (Allmnakrah & Evers, 2020). The need for educational reform has been increasingly recognized after the launching of the economic and human development part of Saudi Vision 2030 (2021b). In addition, the essential changes in the education system are also necessary if young Saudis are to be able to compete for 21st-century jobs (Allamnakhrah, 2013; Salameh, 2016).

In addition to reforms that come from within the education ministry, pressure from outside the country influences reform efforts. Saudi Arabian educational policy needs take advantage of and benefit from global developments. An essential component of these reforms should include observing and analyzing some of the educational systems in the developing countries and subsequently adjust them to fit with the value of Islamic norms, culture, and philosophy (al-Essa, 2009). Teachers are the major element in order to accomplish and complement reform objectives. Teachers' views on educational reform as well as skills required, such as critical thinking and problem-

solving skills, should form vital and essential aspects of education reforms in Saudi Arabia. In addition, the level of scientific research and development should be raised as well as the level of professionalism in all spheres of education (Allmnakrah & Evers, 2020).

Overview of the Education in Saudi Arabia

The public general education system in Saudi Arabia officially started in the year of 1925. Before that date, education was mostly accomplished in mosques and Qur'anic schools where students were taught to write and read Arabic in order to recite the *Holy Qur'an* (Al-Liheibi, 2008). King Abdul-Aziz founded the Directorate of Education and established the first public schools in 1930. Following that, formal education was generated in Saudi Arabia with an emphasis on the role of religious studies as a foundation of the education system (Elyas & Picard, 2010).

Education is considered highly important by the Saudi government as the Islamic religion refers to learning in many verses of the *Quran* (Al-Atwaneh, 2009). Furthermore, the first verse in the holy book that was received by Prophet Muhammed was an order to "read" {اقرأ} (Surah Al-'Ala, verse 1). As the value of education in the country was recognized and the results of the development of education drew great attention across the country, the government began to invest in improvements to the system in order to meet the demand for higher standards in education. Saudi Arabia is currently grappling with how to transform its education system to fulfill the nationwide initiatives established by the 2030 Vision (Bunaiyan, 2019).

Currently, the educational system in Saudi Arabia consists of three types of schools: public schools that include *Quran* memorization schools, private schools, and international schools (see Table 1). Initially, public and private schools were the only options available to Saudi students, however, now as more international schools are

opening, some Saudi students began to attend those schools. Non-citizen Arab students can also attend public school as the curriculum and instruction are delivered in Arabic. Private schools have begun implementing the same curriculum as public schools. However, private schools tend to have more autonomy, which enables them to devote more time to English proficiency, STEM, computer science and any other subjects that can make the school more competitive in attracting student enrollment (Habbash, 2011; Ministry of Education, 2002, 2019).

International schools are considered a type of private school that exists to better meet the needs of students and provide more focused English instruction. They are permitted to utilize curriculum other than what is used by the public school system. International schools offer distinct advantages, including additional curriculum options and longer student instructional time. International schools can be classified into two types (Alrashidi & Phan, 2015). The first type of international school is operated by foreign embassies to serve mainly the children of their citizens who are employed as expatriate consultants or workers in Saudi Arabia. For example, European or North American international students who do not speak Arabic can be enrolled in this type of international school. As Saudi Arabia aims to provide educational opportunities for all its residents, there is a variety of international schools of this type; for instance, there are schools for the children of Indian, Filipino, Indonesian, American, and British nationals who are working in Saudi Arabia. Those international schools provide similar curricula to the schools in the students' home countries. This approach enables the students to comply with accreditation standards of their respective education programs to ensure easy transition and re-admission when they return to their home countries (Alrashidi & Phan, 2015).

The second type of international school is privately organized and is multinational and multicultural. Saudi students and other students from various countries of the world can be enrolled in these schools (Alrashidi & Phan, 2015). In this type, the main language instruction is English, and the curriculum conforms to Western standards. Saudi Arabia’s Ministry of Education permits international schools to utilize British or American curricula for teaching core subjects in English, including math, language, arts, and social studies. Additionally, these schools must teach courses centered around Arabic, the national language of Saudi Arabia (Habbash, 2011; Ministry of Education, 2019).

Table 1

Different Types of Schools in the Education System in Saudi Arabia

<i>Public schools</i>	<i>Offered to all students without fees as they are funded in whole by the government for all general and special education students.</i>
<i>Quran memorization schools (religious school)</i>	Governmental and free for all students; however, some require certain criteria for the students to be admitted to the schools, such as special interviews. The Quranic schools follow the general curriculum with the addition of <i>Quran</i> lessons every day and subjects related to Islamic studies.
<i>Private/independent schools</i>	Non-governmental and require tuition fees. Follow the general curriculum with an addition of some subjects, such as languages, technology, or STEM.

<i>International/ foreign schools</i>	Non-governmental and promote international education by following a national curriculum of the state and private schools in the country of residence.
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The education system in Saudi Arabia ensures the education right for males and females equally within a separated school sitting (Morin, 2015). In addition to the Islamic rules that Saudi education follows, some studies have suggested that the female and male genders have different ways of learning (Wehrwein et al., 2007). The mental and physical growth of girls and boys at different stages have somewhat different requirements, which is why many educational institutions are experimenting on the effectiveness of learning in single-sex education environments.

According to the Ministry of Education (2021), the enrollment of students in 2020 for each type of school based on gender is shown in Table 2.

Table 2

The Enrollment Statistics of Female and Male Students in 2020

Number of students	Female	Male	Total students
Private school students	327879	393964	721843
International/ foreign schools	197584	148414	345998
public schools (including Quran memorization schools)	2692024	2427911	5119953
Total of students	3217487	2970289	6187776

Special Education

The beginning of the educational system in Saudi Arabia commenced with public education schools and was limited to general education students as was the case in most of the world's schools. Children and young persons with disabilities were dependent entirely upon their parents for any educational support (Al-Liheibi, 2008). Since many students with disabilities could not benefit from the existing general public education system, the field of special education was developed. The first special education programs formally provided in Saudi Arabia were in 1958, which was a non-profit program only for people who were blind. The program helped blind adults in learning to use Braille and was offered during the evening, only in the capital city Riyadh (Aldabas, 2015; Al-Kheraigi, 1989). Yet this program was a door opening for the special education services that were to come in Saudi Arabia.

Following the beginnings of this non-profit organization in Riyadh, the Saudi Arabian government supported the Ministry of Education in 1960 and established the first special school called the Al-Noor Institute, which served male individuals with poor vision, blindness, or visual impairments (Aldabas, 2015; Alshahrani, 2020). The curriculum was an adjustment of the general education curriculum with additional instructions, such as using Braille to meet the needs of students. The curriculum also included training on orientation and mobility, and it was taught by teachers who were blind. The Al-Noor Institute accepted students at all levels from the elementary level through middle school and up to high school. This institute was the first educational facility for the vision-impaired in Saudi Arabia and formed the basis of public special education services (Aldabas, 2015).

Although services for special education started with a focus on students who were blind, Saudi Arabian disabilities services were extended in 1964 to cover the

needs of students with the establishment of Al- Amal institute. Al-Amal Institute was the first school to educate students with hearing impairments and deafness by adapting the general education curriculum. The school focused on teaching sign language to students of various ages and in various placements. These services for individuals with disabilities were extended in the years from 1960 to 1971. From initial limited services for a specific disability to opening the Special Education Agency in the Ministry of Education in Saudi Arabia brought about further progress. In 1971, the establishment of the Intellectual Education Institute marked a new phase in Saudi Arabia's aims to educate students with intellectual disabilities. Since then, the Institute has been providing special education and training as well as housing for boys and for girls with severe intellectual disabilities, with a curriculum focused on developing social, behavioral, and daily life skills (Al-Wabli, 1996).

Following that development, in 1974, the Ministry of Education established a General Directorate for Special Care, with attention to improving services for individuals with disabilities. This directorate began by providing services for the three main types of disabilities that were identified at that time: blindness, deafness, and mental retardation (Ajmi, 2006). The directorate service was not limited to providing schooling; it extended to taking the responsibility for designating vocational rehabilitation centers and rehabilitation provider preparation programs. In addition to the direct services for individuals with disabilities, the General Directorate for Special Care advocated for the policies and regulations in relation to the future employment of individuals with disabilities. It did this by training them for some accessible jobs and supervising them, coordinating, and following up on national efforts that result in occupational training and the integration of individuals with disabilities into community life (Ajmi, 2006).

Special education in Saudi Arabia continued developing between 1987 and 2000. According to the Ministry of Education (1995), the major objectives of special education at that time were to (a) discover each child's skills and abilities, in order to develop them through appropriate programs and activities; (b) give children every opportunity for education and help them achieve their highest potential; (c) raise children with an awareness of Islamic teachings and morals; (d) develop acceptable social behavior and prepare children for a stable life; (e) provide stability for children with disabilities and needed medical, psychological, and social care, and help children become as independent as possible; (f) prepare children for possible work in order for them to be productive and self-supporting members of society; and (g) educate the general public about disabilities and foster greater understanding of how to interact with children with disabilities.

A significant amount of attention at that time was provided to mild and moderate disabilities, although there was limited knowledge regarding the identification of some disability categories, such as autism and specific learning disabilities. However, the Department of Special Education opened special education schools that focused on educating students with high incidence disabilities. More resource rooms or special education classes within the public schools were established for students with mild to moderate intellectual disabilities, mild to moderate autism disorders, and hearing impairments (Aldabas,2015; Al-Mousa, 2010; Alquraini, 2011).

As the early movement to improve special education services led to increases in these services, today students with disabilities in Saudi Arabia are receiving a quality education that is meeting their needs as well as training programs aimed to provide individuals with disabilities with life skills to guarantee their ability to live independently and safely (Al-Abduljbar et al., 2006; Al-Mousa, 2010; Al-Sartawi &

Abunyan, 1998). The Ministry of Education was and still is working to establish regulations that guarantee rights for individuals with disabilities. It is also increasing the quality of special education services and educating professionals who are qualified to provide these services (Ministry of Education, 2008). A summarised history of special education developments in Saudi Arabia is shown in Table 3. Even though the Kingdom of Saudi Arabia's special education services and programs are progressing rapidly, in comparison with the United States, Saudi Arabia's special education services are still at a developmental stage (Alquraini, 2016).

Current Special Education Services and placement

The special education system of Saudi Arabia has evolved dramatically since its founding 78 years ago (Royal Embassy of Saudi Arabia, 2010). Currently, students with disabilities are better identified and more involved with the general educational settings. Following is an illustration of the typical educational setting for students with disabilities based on their needs:

Students with mild and moderate disabilities. Students with mild learning disabilities receive their educations within a public classroom depending on their disabilities. Students with specific learning disabilities receive their education within general classrooms with some support from special education services, such as resource rooms. These students also fully participate in the general education curriculum with some modifications and accommodations.

Students with mild to moderate disabilities, including intellectual disabilities, autism and hearing impairments, receive their education in separate special education classrooms (self-contained classes) located at the general education schools. They share general events and activities time with their typically developing peers in non-curricular activities, such as lunch or recess. The schools provide special education curriculum to

these students for all levels starting with elementary, secondary, and high school level. They receive curriculum that is designed to meet their special needs (Aldabas, 2015; Alquraini, 2011)

Students with severe disabilities. Students with severe disabilities in Saudi Arabia receive their education in separate institutes. These students often are educated in special settings that segregate them from interactions with their typically developing peers. The curriculum for students with severe disabilities in these institutes is based on individual education programs (IEPs) that are modified from a special education curriculum and designed by the Ministry of Education for these students. Even though the curriculum is designed to meet the students' special needs, it may lack some of the support for the students' needs to improve social, communication, and academic skills. These institutes provide residence, food, financial aid, and assistance to students with moderate, severe, or profound intellectual disabilities, multiple impairments, and autism. A portion of the students stay for the week and return home for the weekend. This facility is available based on the individual student's and their family's preference (Aldabas, 2015; Alquraini, 2011).

The other categories of disabilities, such as Emotional and Behavioral Disorders (EBD) as well as Attention Deficit and Hyperactivity Disorder (ADHD) are still not fully identified on the educational systems. However, they receive medical services as provided for other conditions as they are defined as disorders rather than a type of disability (Aldabas, 2015).

Table 3*The Improvement of the Special Education Services Over the History of Saudi Arabia*

Year	Type of Disability	Placement	Note
1958	Blindness (men)	Private Place/ nonprofit group.	A blind man started to learn to use the Braille System. Small group training in Braille Sponsored by Ministry of Education.
1960	Blindness (boys)	Special Day School.	Special school for blind males (Al-Noor Institute) various ages.
1962	-	-	Administration of Special Education established by Ministry of Education Sponsored by Ministry of Education- Administration of Special Education
1964	Blindness (girls)	Special Day School.	Special School for blind girls (Al-Noor Institute) various ages. Sponsored by Ministry of Education- Administration of Special Education.
1964	Deafness (boys)	Special Day School.	Special Schools (Al-Amal Institute) various ages Sponsored by Ministry of Education- Administration of Special Education.
1964	Deafness (girls)	Special Day School.	Special Schools (Al-Amal Institute) various ages
1971	Intellectual disabilities	Special Day School.	Sponsored by Ministry of Education- Administration of Special Education
1974	-	Residential School.	Ministry of Education 10 for deaf; 6 males/4 females.
Between 1960-1987	Blindness, Deafness, Intellectual Disabilities	27 Institutes special day schools and some residential schools.	10 for blind; 7 males/3 females. 7 for mental retardation; 4 males/3 females
Between 1987-1990	Blindness, Deafness, Intellectual Disabilities	54 special day schools and some residential schools.	Sponsored by Ministry of Education- Department of Special Education
Between 1990-2000	Mild and moderate Intellectual Disabilities, Autism, hard of hearing, Hearing Impairments	Full-time special education classrooms in public schools	Sponsored by Ministry of Education- Department of Special Education
Currently	Mild to Moderate Learning Disabilities	General education classrooms with resources rooms and assistance.	Sponsored by Ministry of Education- Department of Special Education
Currently	Moderate, Profound and Severe Disabilities including Intellectual Disabilities, Autism, Deafness-Blindness, multiple Disabilities. Physical Disabilities	Special day schools.	Sponsored by Ministry of Education- Department of Special Education. Ministry of Social Affairs

Note. Adapted from Aldabas (2015)

Related Services for Students with Disabilities

The educational system in Saudi Arabia follows the law of the Regulations of Special Education Programs and Institutes of Saudi Arabia (RSEPI). The RESPI includes 11 Articles that present important issues in special education and has many similarities with Federal special education laws in the United States (IDEA). The articles of law describe the services that students with disabilities should receive based on their need. The Second Article of the RSEPI, for example, explains the services that should be provided for students with disabilities to meet their special needs and support them in obtaining the necessary skills that assist them in living independently and integrating appropriately in society.

These goals can be achieved through different procedures including : (a) determining the needs of students with disabilities through early detection processes; (b) providing a free and appropriate special education and related services that meet the needs of students with disabilities; (c) presenting these services to the students with disabilities in Individual Education Plans (IEPs); (d) taking advantage of scientific research to improve the services of special education; and (e) raising awareness about disabilities among the members of society by discussing the causes of disabilities and the ways to reduce them (Ministry of Education, 2002).

Alquraini (2011) described a number of studies that investigated the access of services that are available for students with disabilities. He indicated that not all the schools have provided the same services for students with disabilities. However, the services that are mostly available include transportation, psychological services, and counseling. The other services, such as speech and language pathology, physical therapy, and occupational therapy services, are found to be rarely available. He

suggested reasons could be that there is a lack of professionals who specialize in these fields or that professionals with that focus often are employed in hospitals but not in schools.

The laws of RSEPI support the rights of children with disabilities to obtain a free and appropriate education by considering many elements that guarantee this right. This legislation requires schools to educate the students with disabilities in a general education setting based on the students need to the maximum extent possible, taking into account a continuum of alternative placements. RSEPI in addition requires schools to provide special education services related to IEPs as well as other related services and transition services, emphasizing carrying those services out with students with disabilities in the real world (Alquraini, 2013).

Special education teachers in Saudi Arabia

In Saudi Arabia and worldwide, there is a growing need for highly qualified teachers and a more comprehensive understanding of the role of special education in the general framework of education, as the number of students with special needs entering the mainstream classroom setting increases (Dimitrov & Alsadaawi, 2018). Hence, the special education program and services in Saudi Arabia have made progress during the past decade, which extends to preparation programs for teachers who deliver lessons in inclusive classrooms (Ajmi, 2006). Thus, one of the steps that made a difference in teacher preparation was in 2010, when the Saudi Ministry of Education concluded an agreement with the National Center for Assessment (NCA) to develop and conduct teacher certification tests. Before that, the only preparation the special education teachers received was the four academic years of bachelor's degree in special education (Dimitrov & Alsadaawi, 2018; Maash, 2021).

Under the aim of improving the teaching profession of special education teachers, in 2011 the NCA signed a contract with the Tatweer Company for establishing a project for educational services. The project included the establishment of National Professional Teacher Standards (NPTS) which consists of 12 standards divided into two categories:

1. The first category includes general standards that represent general teaching requirements, specifically: professional knowledge, promoting learning, supporting learning, and professional responsibility.
2. The second category of NPTS includes subject-specific teaching standards that cover 28 teaching areas. The standards serve to guide the construction of new teacher licensure examinations, identify training needs for new teachers, and ensure the quality of teaching programs (Dimitrov & Alsadaawi, 2018).

The Ministry of Education in conjunction with the Saudi “Vision 2030” is working currently on planning for implementing some adjustments and changes regarding teacher preparation programmes for all majors including special education. The changes include acceptance criteria of student-teachers, the number of years of educational preparation, and some other teacher assessment programs (Maash, 2021).

Limitations and challenges that face the special educational system in Saudi Arabia

As this background history of special education in Saudi Arabia has illustrated, the country has progressed well during the past 20 years. However, it is clear that the special education system faces many challenges in terms of how services can be

restructured and improved. Some of the challenges that face special education in Saudi Arabia are as follows:

General concepts that are presented in the special education regulation

RSEPI. The Special Education Department under the Ministry of Education in Saudi Arabia introduced the first regulations for students with disabilities in Saudi Arabia in 2001. Even though these regulations illustrated the right for students with disabilities from many perspectives, the regulations lack some details. This shortcoming led to misconceptions among schools in terms of the requirements for highly qualified special education teachers, related services, early intervention programs, and least restrictive environment. Although this legislation stipulated that only the Special Education Department has the responsibility to interpret the context of this legislation, there was no further explanation or clarification considering which department would be accountable for enforcement of the implementation of the RSEPI with children with disabilities (Alquraini, 2013).

Lack of qualified teachers and specialists. One of the major challenges facing the special education field in Saudi Arabia is the lack of qualified personnel. On the one hand, the issue is related to the law itself since RSEPI does not define the requirements for high quality special education teachers (Alquraini, 2013). On the other hand, the field of special education has made significant progress, yet training programs for the teachers to gain qualifications in special education have not progressed (Ajmi, 2006). At the present time, other than a bachelor's degree in special education, there are no outstanding training requirements for individuals who are teaching or working in special education settings. Even the pre-service training that prepares the special education teachers at universities does not require prospective teachers to be familiar

with the profound needs to teach accommodations necessary for students with disabilities in inclusive settings.

As previously stated, the push for inclusion and the consideration of general education settings to be the most suitable educational environment for many students with disabilities in the current school system is clear. However, inclusion efforts and the preparation for it are weakened by the lack of training and expertise of general education teachers who are not prepared to provide the educational services that reach the needs of students with disabilities (Ajmi, 2006). In addition to lack of training among public school teachers about students with disabilities, there is a need for awareness of the rights of inclusion for students with disabilities. Some of the comments that occur among general education teachers are that students with disabilities may be called names or not be comfortable around students in the general education classroom. Many educators may think that the equal but separate theory is the best way to teach students with and without disabilities (Al-Faiz, 2006).

The disconnect between the educational services and other services, such as health services and therapies. One of the essential issues facing special education in Saudi Arabia currently is the lack of connection between the educational services which can be received based on the individual education programs (IEPs) and the related services, such as occupational and physical therapists, and speech and language pathologists. Connecting those services within the educational plan can enable students to receive more benefits from their IEPs and develop communication, physical, and other skills.

Moreover, the IEP that is designed for students who are receiving educational services in special institutes is mostly modified from a special education curriculum that was designed by the Ministry of Education for these students and as a result, the

expectation from it is low. The IEPs often do not meet unique and individual needs; instead, these students should receive IEPs based upon the general curriculum (Alquraini, 2011)

Gap between the policies and the practices. The foundation of the field of special education comes with policies that support the equal rights of individuals with disabilities to obtain a free and appropriate education. Although these laws were passed more than a decade ago in Saudi Arabia, they are not being implemented in the education system. This has created a gap between the framework of these laws and the provision of services. The consequences affect the level and quality of services students with disabilities receive and sometimes lead to a lack of services with a specific aim to achieve inclusivity and equity in learning for these students (Alquraini, 2011; Bagadood & Sulaimani, 2021).

Inclusion provides an example of this problem since, in theory, students with mild and moderate intellectual disabilities should be included in mainstream schools, principally to gain the benefits of social interaction with their typically developed peers. However, as Alnahdi (2013) and Alquraini (2011) report, in reality, these students often spend all day in separate classrooms and do not have the option to engage in integrated activities, such as sports, with their peers. Consequently, students with mild and moderate intellectual disabilities tend to remain isolated without any interaction with their typically developing peers. This cannot then reasonably be described as inclusion; rather, it contradicts the idea of inclusive education. Therefore, these gaps in the framework of the implementation of the law have led to weaknesses in the provision of special education services for students (Alquraini, 2013).

Education Reform and the 2030 Vision

The Saudi Vision 2030 (2021a) is a long-term plan that focuses on reducing the country's economic reliance on oil and increasing investment in the private sector. Currently, the government of Saudi Arabia is working its best to implement the transformation of the education system in order to fulfill the nationwide initiatives established by the 2030 Vision. This has created unparalleled challenges to educators in general and to special education educators, who must teach students the skills required for future employment in a globalized workforce. Further, these reforms are expected to be sustainable in an effort to solidify the country's long-term success, thus, educators are needing a framework that can help them to manage the transformation in a professional way.

According to the Saudi Vision 2030 (2021a) strategy, the government will continue investing in education and training so that young men and women are equipped for the jobs of the future. Saudi children, wherever they live, should enjoy a higher quality, multi-faceted education. Plans are to invest particularly in developing early childhood education, refining the national curriculum, and training teachers and educational leaders.

Vision 2030 and Special Education

Even though the government is still working on providing a detailed report on what exact changes are going to be implemented to improve this sector of education in general and special education in particular, the National Transformation Program approved strategic objectives that will be focused on bringing reforms according to Vision 2030.

The objectives are as follows:

- Provide education services to all student levels;
- Improve recruitment, training, and development of teachers;

- Improve learning environments to stimulate creativity and innovation;
- Improve curricula and teaching methods;
- Improve students' values and core skills;
- Enhance the educational system's capability to address national development requirements and to meet labor market demands.
- Develop creative financing methods and improve the educational system's financial efficiency.
- Increase private sector participation in the education sector.

Universal Design for Learning and the educational system in Saudi Arabia

Universal Design for Learning is a framework that is designed educationally to address and support the diversity of the students and the variability of their learning abilities (Navarro et al., 2016; Spooner et al., 2017). The UDL framework addresses the natural variability of learners by intentionally designing learning opportunities and environments that increase accessibility (Coyne et al., 2017).

In the United States, the promises of UDL have been recognized by the state and federal governments; however, programs have not yet been widely implemented in the classroom and the challenge to achieve consistent outcomes continues to elude school systems (Rao et al., 2017; Wu, 2010). Although UDL is well known in the U.S. educational system, some countries including Saudi Arabia view the concept of UDL as another way of inclusion. Inclusion is often described in the literature as having an open, welcoming environment that reduces discrimination. Moreover, inclusive communities can provide effective education for the majority of children, since the term inclusion goes beyond integration and is often contrasted with exclusion (Evans & Lunt, 2002).

Inclusiveness has begun to be implemented in preschool classrooms in different places around the world. For example, a recent study of Swedish preschool classrooms illustrated growing interest in planning and evaluating high-quality inclusive preschool classrooms (Lundqvist & Larsdotter Bodin, 2018). Even though UDL has been for a familiar concept for nearly 20 years, it is one of the least understood concepts in education and special education (Edyburn, 2010).

Considering the challenges that face the special education system in Saudi Arabia, introducing the principle of UDL to the educational system may offer solutions, even as a tool for implementing a successful inclusion. In addition, UDL may provide effective approaches for overcoming many of the issues in education. The next section outlines a number of UDL advantages.

Create equal learning opportunities for all students and improve their outcomes:

Research has shown that UDL implementation in education is a promising solution to minimize learning barriers. Although UDL is considered a new learning model and there is still a need for more empirical research to deeply investigate its effectiveness, the UDL framework can facilitate the curriculum delivery to a wide number of students with different abilities, while ensuring equity in education (Mangiatordi & Serenelli, 2013; Rao, Ok, & Bryant, 2014). Equity is an educational concern worldwide and depends on the practices and implementation of the educational system, background knowledge, economic level, and other factors.

Thus, different international contexts can lead to different practices and evaluation of the inclusive classroom (McLinden et al., 2018). By designing, developing, and implementing a curriculum with a consideration of individual abilities, UDL has increasingly attracted attention in education (Smith & Harvey, 2014). Thus, UDL-based curriculum design has shown evidence of reducing learning barriers for

students with disabilities and enabling them to achieve outcomes equivalent to their typically developed peers (Al-Azawei, Serenelli, & Lundqvist, 2016).

Curriculum design using UDL-based approaches has shown evidence of reducing learning barriers between students with disabilities and their typically developed peers. According to an analysis by Al-Azawei, et al. (2016), one of the recognized advantages of UDL is the improvement of students' perceptions and outcomes. Students who attended UDL-based courses showed high satisfaction, positive attitude, and greater engagement in comparison to their peers. This result argues strongly that UDL can help the students to be encouraged to complete their courses successfully and adopt different modes of learning, including learning with the use of technology.

Improving the teaching practices:

The UDL teaching model provides teachers with opportunities for expanding their academic understanding and guiding them in designing more accessible and systematic lessons and courses. According to Courey et al. (2012), a UDL-based training program was offered to improve the awareness of candidate teachers in developing novel teaching approaches in terms of representing the learning content, engaging students, and assessing their understanding. Consequently, the variety of instructional and assessment methods of UDL lead to lesson proficiency and benefit for students at a variety of ability levels.

Create a guideline to evaluate the curriculum:

The UDL principles can be used as a comprehensive guideline by educationalists as a starting point in developing accessible curricula or for evaluating their current design, which is supporting the goal of this study. For instance, Mavrou & Symeonidou (2014) successfully used the model for investigating and evaluating the

extent to which ‘new national curricula (NNC)’ were developed for the public Greek-Cypriot schools based on UDL guidelines.

Another benefit of UDL adoption is its adaptability for successful application to different disciplines and learning modes, such as remote learning using technology. In the study conducted by Hall et al. (2015), students with disabilities in an online course achieved significantly higher outcomes than those in the traditional setting. Thus, in order to provide better learning opportunities for students with and without disabilities, there is a need for further research to identify a better combination of online courses in accordance with UDL principles. Therefore, UDL represents a promising solution in maximizing the benefits of Technology Enhanced Learning (TEL) to a larger audience rather than serving a particular group of learners (Al-Azawei et al., 2016).

Even though the framework and application of UDL seems effective, it is still difficult to consistently measure due to its focus on flexible, proactive, and iterative design (Basham, Gardner & Smith, 2020). The UDL model provides an intricate framework of implicit principles, guidelines, and checkpoints to support variability in the context of learning (see Figure 1). In terms of design considerations, the framework supports access, builds knowledge, and encourages internalization of knowledge and skills in relation to developing an expert learner (CAST, 2018; Meyer et al., 2014). Therefore, UDL can be adopted to evaluate the teachers' practices in inclusive classrooms based on the basic framework. However, it needs deeper observation to implement it into the educational system.

Summary

The review of the literature in this study began with an outline of the history of the education system in Saudi Arabia with special attention to the development of special education for children with disabilities, which illustrated the progress toward a

more inclusive style of classroom setting. This progress in Saudi Arabia is aligned with the purposes of inclusive education programs in other countries; however, there are still significant barriers to a truly inclusive approach to education. Despite the challenges facing special education in the country, the government's Vision 2030 (2021a, 2021b) program to improve the quality of teaching and equity of education in Saudi classrooms holds much promise for the future. One of the concepts included the Vision 2030, *Vision Realization Program. Human Capability Development Program* (2021b) that can improve education is the focus on building an improved training and qualification framework for the teaching profession, especially for teachers who are leading inclusive classrooms. The framework of UDL can be a useful model to assess the current teaching practices and to help with the future building of education to create a welcome, inclusive, and equitable learning environment for all students no matter what their level of ability may be.

Figure 1.

Universal Design for Learning Guidelines (CAST, 2018)



udlguidelines.cast.org | © CAST, Inc. 2018 | Suggested Citation: CAST (2018). Universal design for learning guidelines version 2.2 [graphic organizer]. Wakefield, MA: Author.

CHAPTER 3: RESEARCH METHODOLOGY

introduction

This chapter describes the research design and methodological approach to the study, the outlined research questions, procedures, and the use of methods for research design, data collection, data analysis, and quality assurance. In this study, the aim is to identify teaching practices that teachers describe using in inclusive classrooms in Saudi Arabia. Principles and guidelines of Universal Design for Learning were used as a framework to examine teachers' practices in depth. To allow for exploration into the teachers' practices and views about the principles of UDL based on their practices, mixed qualitative and quantitative research methods was used (Creswell, 2008; Plano Clark & Ivankova, 2016).

I conducted a mixed method approach to ensure a better sense of the data and to have access to the different benefits that qualitative and quantitative method provide. The simple definition of mixed method can be that a mixed methods approach to research is a representation of meaningful integration of both quantitative and qualitative data (Guetterman et al., 2020; Heigham & Croker, 2009) Another definition presented by Creswell (2008) is that the mixed method approach is a way of investigating and understanding a research problem more completely by the use of procedures for collecting, analyzing, and mixing quantitative and qualitative data at some stage of the research process within a single study.

Mixed methods research can provide a profundity and expansion that either quantitative or qualitative methods may lack if they are applied singularly (Heigham & Croker, 2009). Thus, this method was used to gain an in-depth understanding of the

nature of teacher practices in inclusive classrooms. The advantage of applying the mixed method is based on the strengths of each method individually. Whereas quantitative method works to produce factual, reliable outcome data that are usually generalizable to some larger population, the qualitative method works to generate rich, detailed, valid process data that usually leaves the study participants' perspectives intact (Steckler et al., 1992).

Even though quantitative and qualitative methodologies share some basic principles, the two methods are significantly different. Quantitative research is used to study research problems looking for trends or explanations of variables. It is mainly concerned with the testing of hypotheses and statistical generalizations. On the other hand, qualitative research does not usually employ statistical procedures or other means of quantification, focusing instead on understanding the nature of the research problem rather than the number of observed characteristics used to study research problems that seek to understand a central phenomenon (Creswell, 2005; Baskarada, 2014).

Another difference between quantitative and qualitative methods is related to time and resources. In more detail, it is clear that quantitative methods sometimes fall short when the instruments needed to measure specific knowledge, attitudes or behaviors do not exist. Developing questionnaire items or scales that are both valid and reliable is difficult when using quantitative research methods, whereas qualitative methods can be a great fit for that type of research (Steckler et al., 1992).

On the other hand, in the most basic terms, quantitative research methods are concerned with collecting and analyzing data that is structured and can be represented numerically (Goertzen, 2017). Quantitative research methods in this study were represented using data that are acquired via an online survey. Survey research aligns with the purpose of this study, which seeks an understanding of teachers' experiences

and practices in teaching inclusive classrooms. Gay et al. (2012, p. 183) identified “collecting data to test hypotheses or to answer questions about people’s opinion on some topic or issue” as very important in survey research. Survey research is a tool that is commonly used to collect data about public and expert opinion across social science disciplines (Frاندell et al., 2021).

One of the great advantages of technology growth is the electronic use of surveys. The fastest-growing form of survey research across the globe and related research continues to emerge as technology evolves (Dillman et al., 2014). Dillman et al. (2014) also discussed some of the elements that can help me to improve the quality of the electronic surveys, which can help to reduce sources of error (e.g. coverage, nonresponse, measurement) and increase response rates. Those elements focused on types to increasing the benefits of survey participation, decreasing the costs of participation, and establishing trust with participants.

Qualitative research methods provide rich contextual pictures and in-depth descriptions that extend a deep understanding of how participants perceive a phenomenon (Finn & Kohler, 2010). Park and Lee (2010) explained the process of interpreting the data in qualitative research, which starts with multiple investigations of cases or perspectives. Subsequently, collecting and studying a relevant literature and member checking with the individuals involved in the research is done to ensure reliability and validity begins. These are considered essential elements to enhance the credibility of qualitative research.

According to Merriam (1998), “Qualitative researchers are interested in understanding the meanings people have constructed, that is, how they make sense of their world and the experiences they have in the world” (p. 6). Denzin and Lincoln (2005) define qualitative research characteristics:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. (p. 3)

Qualitative research assumes that social reality is a human creation, and that study interprets and contextualizes meanings from people's beliefs and practices (Baskarada, 2014). According to Shaw (2003), qualitative research is valuable and trustworthy for two reasons that are important for this research. First, it is rational to claim a deepened methodological strength in qualitative research in the policy field. The aim is to examine the inclusion in classrooms in Saudi Arabia. However, the ultimate goal is to introduce the principles of UDL into the Saudi Arabian educational system if the study suggests that this is appropriate. Shaw (2003) claims that in some cases, government departments are more open to commissioning qualitative research for evaluative purposes. As a result, the teaching practices in inclusive classrooms and the evaluation of these practices based on the guidelines of UDL may have value using qualitative methods.

Second, qualitative research that can serve the wider developments underline the value of evidence-based policy and practice. Government departments and research funding bodies work to facilitate the integration of research into professional practice, which qualitative research can support (Shaw, 2003). This research aims to discover the development of teaching practices that can be considered evidence-based practices.

Even though UDL is certainly a promising practice, it is critical to consider the argument that UDL has not yet reached the level of being worthy of the label “evidence-based practice” (McGuire, 2014).

The study is situated within these interlocking contexts as this dissertation seeks a greater understanding of the current teaching practices in inclusive classrooms in Saudi Arabia and teachers’ perspectives about their teaching experiences. Thus, the process of investigating the teaching practices in inclusive classrooms is a task best accomplished by utilizing mixed methodology and its related techniques as the research framework. Through mixed qualitative and quantitative research techniques, the relationships and resulting interactions between various research contexts, teaching practice in inclusive classrooms, and the use of the principles of UDL were uncovered. These experiences facilitate the understanding of the teachers' practice and teaching methods in inclusive classrooms with the lens of UDL, giving it meaning. Both the context and the principles of UDL provide the external boundaries for this study.

Data Collection

The data collection was planned to be conducted during the summer and early fall of 2021 via interviews and survey. All data ingathering from participant resources were with explicit consent from the participants and in complete compliance with Institutional Review Board (IRB) guidelines. Both the survey and interview questions were designed by me and reviewed with the assistance of a faculty member, who approved them. The questions were developed based on the principles of UDL to meet the aim of the study.

Surveys: As this research plans to collect the points of view of multiple participants, the survey data were collected from a variety range s of teachers from different teaching levels who have different levels of teaching experience and are

directly involved with inclusive classrooms in Saudi Arabia. The use of multiple sources provides a more convincing and accurate study (Yin, 1994).

The online survey was designed to collect salient information regarding participants' years of teaching experience, grade levels taught, and the number of years they participated in inclusive classrooms. Then the online survey focused on the philosophy of inclusive classrooms, teaching methods used in inclusive classrooms, and the curriculum and the environment of inclusive classrooms (see Appendix A).

According to Dillman et al. (2014), the best way to select participants for survey data is to have a frame that contains members of the population. Since the sample for the survey is planned to be selected from the educational environment, I contacted school principals, teachers, and educational institutions in Saudi Arabia to help distribute the survey. The number of the survey participants were 153. estimated sample range for the survey was between 150 to 200 participants and the estimated time for the individual survey to be completed is about 8 to 10 minutes.

Teachers who are directly involved with the inclusive classrooms in Saudi Arabia can respond to survey questions based on a Likert scale measurement. According to Boone & Boone (2012), a Likert scale is a component of a series of four or more (five in this study) Likert-type items that are combined into a single composite score or variable during the data analysis process. This measurement assumes that the strength and intensity of an attitude is linear on a continuum from strongly agree to strongly disagree. Further, I assumed that attitudes can be measured. Combined, the items are used to provide a quantitative measure of a character, attitude, or personality trait.

Interviews: This study gathered data from multiple sources by interviewing several teachers to investigate their practices and perceptions of the teaching method in

inclusive classrooms. Furthermore, the study relies on the interviews as they are considered the primary strategy for data collection in qualitative research. The number of interviews that were eligible to be included in the study was 5. Because schooling in Saudi Arabia is gender-based, 2 of the interviews were with male teachers and the other and 3 of the interviews with female teachers. The interview was semi-structured with individual participants. The interview protocol consisted of 16 open-ended questions that were meant to be adjustable to the context of the interview. Additional questions were raised during the interview based on the context. The length of the interviews was between 45 -60 minutes.

The semi-structured interview is the most commonly used data collection approach that helps me to delve deeply into social and personal matters and collect a wider range of experience in the targeted topic (DiCicco-Bloom & Crabtree, 2006). The open-ended questions that qualitative interview procedures utilize allow for individual variations (Hoepfl, 1997), which help produce a deep understanding of the phenomena from different perspectives. According to Yin (2009), interviews allow a participant to discuss a topic in greater depth, for example, in comparison to a questionnaire (see Appendix B). Recording the data during the interviews was mostly electronically. Hand recording was also used with notes and further comments that were be added based on the flow of the interview.

I was planning on adapting to change as needed, since being open to the unexpected and prepared to change the direction or focus of the research as needed is important to the process. Throughout the study, data were collected, coded, and interpreted to provide a detailed description of how teachers use classroom practices and teaching methods which have relationships to the principles of UDL to design instruction and capture their perspectives about the use of these methods.

The school district where the interviews took place is well known to me since I am from the same district. Even though the data were collected online, and I was not physically there at the school due to the COVID -19 restrictions in Saudi Arabia preventing travel to the country, my positionality and background imparts a deep understanding of the context. This provides an advantage in conducting this research in a familiar setting, including my knowledge about the structures of the educational system, access to data, and trusting relationships with staff. For instance, my familiarity with the education system and faculty help facilitated contact with school principals to ease the process of distributing the survey, and my Arab cultural and linguistic background were facilitated understanding of the meaning of the participants' answers based on their collegiate relationship and shared cultural context.

Research Location and Positionality

The study aimed to collect data in Saudi Arabia from include teachers, who are teaching or working with different level students in inclusive classrooms. It is important to note that the public educational system of Saudi Arabia serves students based on their gender in single-gender schools. The segregation of boys and girls in schools and classrooms begins from the third grade onward through to tertiary level including universities and post graduate studies. In preschools and early primary levels the family can decide if they want their children to attend mixed gender schools or single gender schools. Thus, from third grade, male students are receiving educational instruction from male teachers, while female students receive educational instruction from female teachers. Thus, this study included consideration of whether the two genders of teachers, male and female, played differing roles in the practices of teaching in inclusive classrooms. Moreover, the study investigated the practices of teachers of a

variety of levels and backgrounds in an effort to capture as wide as possible a cross-section of teaching practices in Saudi inclusive classrooms.

The study is an investigation of the teachers and teaching practices of the inclusive classrooms at different school levels where students are from 3 to 19 years of age (refer Table 4). The inclusive classrooms are normally located in the same schools or buildings and include students with different performance and ability levels, but who are at the same grade level based on their age. The facilities are managed and operated by special education teachers who implement teaching practices guided by the national curriculum that are designed to meet the needs of most of the students in the classrooms.

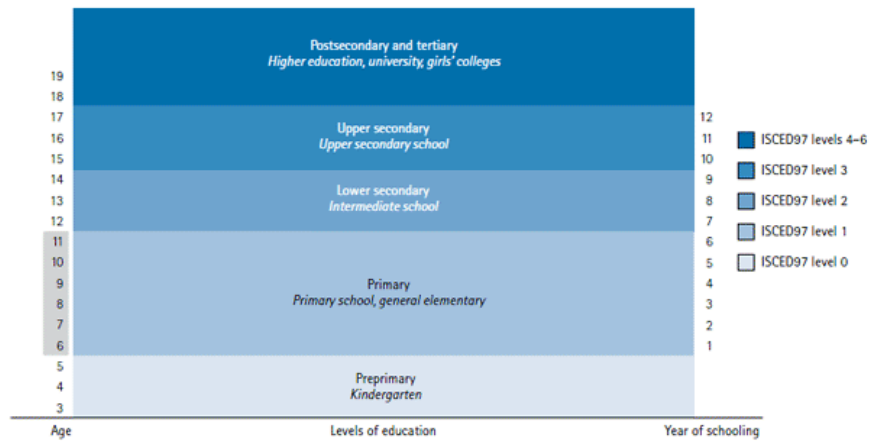
The survey:

Study Setting and Context

The setting for the survey included all education levels in Saudi Arabia within the context of inclusive education. It was an investigation of the teachers' points of view and their teaching practices of the inclusive classrooms at all educational level starting from pre-primary or preschool level (kindergarten), general elementary level, secondary level, and high school level.

Table 4

Saudi Arabia Education System: Levels of Education by Ages and Year of Schooling
(National Center for Education Statistics, 2015)



The participants in the study included special education teachers who teach students with special needs only in the resource rooms or the community-based classrooms, inclusive classroom teachers who teach students in general education as well as students with special needs in inclusive classrooms, and principals who have participated in active teaching practices during the year of conducting the survey or more or been in direct contact with inclusive classrooms. The participants were contacted using a Google survey link.

The link enabled them to answer digitally and return the survey electronically. The link to the survey and an invitation to participate were distributed to teachers with the cooperation of the school principals and educational institutions. There were 152 survey participants who randomly selected from schools in Saudi Arabia.

Table 5 shows the distribution of the sample according to gender, which consisted of 102 female teachers 67.1% and 50 male teachers 32.9%.

Table 5*Statistical Description of Study Participants by Gender Variable*

Variable	Groups	Frequency	Percent
Gender	Male	50	32.9%
	Female	102	67.1%
	Total	152	100.0%

Table 6 illustrates the distribution of the sample according to the teaching level of the participants. The sample consisted of eight kindergarten teachers, at a rate of 5.26% of the study sample, and 48 teachers of the first, second, and third grades, at a rate of 31.58%. The study sample, and 54 teachers of fourth, fifth and sixth grade teachers, with a rate of 35.53% of the study sample, and the sample consisted of 22 secondary level teachers, with a rate of 14.47% of the study sample, and the sample consisted of 20 participants of high school teachers with 13.16% of the study sample.

Table 6*Statistical Description of Study Participants According to the Stage Variable*

Variable	Groups	Frequency	Percent
Grades	Kindergarten	8	5.26%
	First, second and third grade	48	31.58%
	Fourth, fifth and sixth grades	54	35.53%
	Middle School	22	14.47%
	High School	20	13.16%
	Total	152	100.00%

Table 7 shows the distribution of the sample according to experience. The sample consisted of 40 special education teachers whose experience is five years or less t, at a rate of 26.32% of the study sample. The sample consisted of (50) teachers whose experience ranged from 5 years up to 10 years, at a rate of (32.89%). The sample consisted of 30 teachers whose experience ranged from more than 10 to 15 years, at a rate of 19.74% of the study sample, the sample consisted of 16 teachers whose experience ranged from more than 15 to 20 years. At a rate of 10.53%, the sample consisted of 16 teachers with more than 20 years of experience, at a rate of 10.53% from the study sample.

Table 7

Statistical Description of Study Participants According to the Teaching Experience

Variable

Variable	Categories	Frequency	Percent
Teaching Experience	Less than five years	40	26.32%
	From 5 years to 10 years	50	32.89%
	More than 10 to 15 years old	30	19.74%
	More than 15 to 20 years old	16	10.53%
	More than 20 years	16	10.53%
	Total	152	100.00%

The interviews:

the placement of the interviews was meant to be based on the participants' preferences. However, due to the inclusion of participants from different cities in Saudi Arabia and due to strict COVID-19 regulations that were still implemented after going back in person at the time of collecting the data all the interviews were collected online. Zoom app was used for the interview and the participants were notified about the audio recording of the interviews.

Procedures of contacting participants

The participants in the study for both surveys and interviews were inclusive classroom teachers who have participated in active teaching practices during the past five years or more or been in direct contact with inclusive classrooms. The criteria of a five-years or more of experience is to ensure the participants are sufficiently grounded and possess adequate knowledge to provide detailed enough information about the teaching practices they use as teachers in the inclusive classrooms. Teachers with five years or more of teaching have likely gone through a variety of teaching practices and experiences; therefore, they may have found an approach or a framework that works best for them, and they can share that knowledge in this study. Also, they can share information regarding their direct experiences with the current practices in the classrooms.

Interviews: Participants for the interviews were contacted using the WhatsApp Messenger texting cross-platform service (<https://www.whatsapp.com>). This app can be used for text or voice communication with any mobile device that has internet connectivity. Some of the teachers and I are in the same field of study interest and a group using this app has been formed to share content and discuss the trends in the field of special education. Thus, the I contacted potential participants in the study and

explained the study, including the steps for conducting the interview, duration, and method of recording it. Prior to any interviews, the potential participants were given the opportunity to have any questions or concerns addressed and to give written, explicit consent to participate.

Data Processing and Analyzing

Mixed methods research often combines large amounts of explicit data (such as survey data) with smaller sets of less explicit data (interviews). Thus, in order to consider how to deal with the data from both qualitative and quantitative methods in this mixed-method design, a consideration of the implementation, integration, and prioritization was addressed (Creswell et al., 2003).

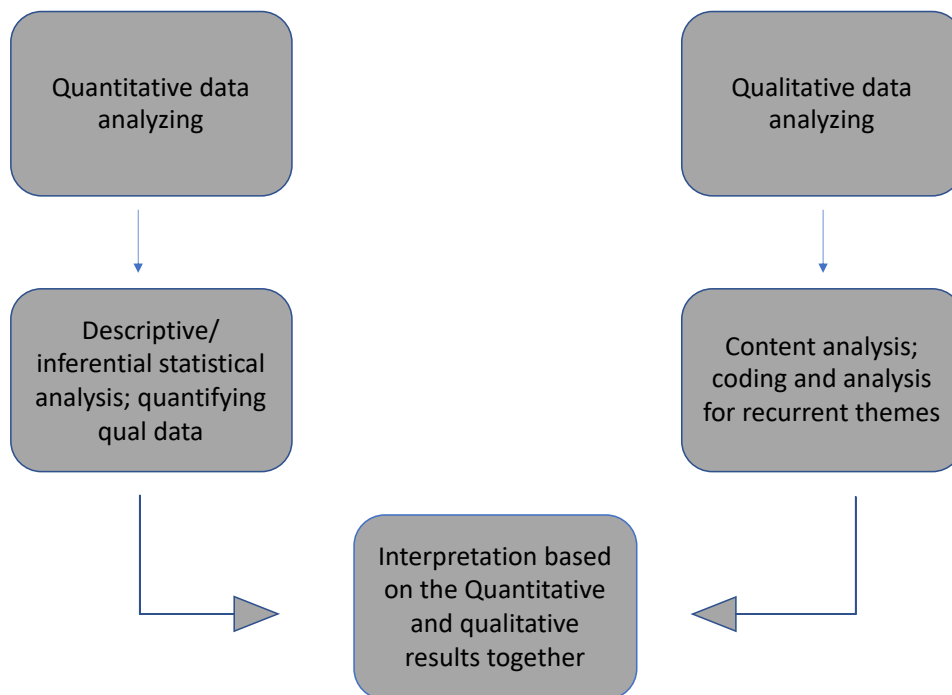
The implementation of data processing is related to the rationale of collecting and analyzing the data in a way that represents quantitative and qualitative data sequentially or concurrently. In this study, a “triangulation design” of collecting and analyzing mixed methods data was applied (Creswell et al., 2003). Triangulation design is the representation of the quantitative and qualitative data collection and analysis in separate sections. Then, the two sections are combined when interpretation of the quantitative and qualitative findings is used to discuss whether the results from both study components converge or show divergence (Heigham & Croker, 2009). For the mixed method triangulation design, the data collection and analysis were done in two different processes based on data collection instruments; however, they were implemented concurrently to maintain connection in the result, as shown in Figure 3.

The second consideration is the priority. This study planned for the two methodologies to be used equally and parallel. Even though the amount of the data is different, the data value is equal. According to Steckler et al. (1992), when the two methods are used equally, often the results from each approach are used to cross-

validate the study findings. That leads to the third consideration of integration, which refers to analyzing the data from the two methodologies. In this research, I evaluated and analyzed the results of each method separately and then decided if the results from each method suggest the same conclusions. (Plano Clark & Ivankova, 2016).

Figure 3

Triangulation Design Procedure for Collecting and Analyzing the Data



The initial plan of data analyzing was to follow these procedures with a similar format. However, changes were needed due to the two different languages, Arabic and English, that are involved in the study. The transcribed interviews (either typed on a laptop computer or handwritten in a notebook) and the survey questions were initiated in English then translated into Arabic, all data were combined the elements of summaries, memos, and outlines into a reflective research journal kept by me. The interview and the survey questions were formulated in English and were approved by faculty members then translated into Arabic, the participants' legal language.

After reviewing the data in Arabic, the interviews transcripts and follow-up notes retranslated into English in readiness for coding. In the coding stage, meaning was given to the data. According to the method described by Miles and Huberman (1984), the procedures of data analysis beginning with noting of patterns and themes, which led to making comparisons and contrasts to determining conceptual explanations of the case study. Toward the end of the analyzing process, the participants were allowed to have the opportunity to review their interview transcripts, which enabled them to review data materials and provide further response to the research questions, as well as corroboration and feedback.

The mixed methods research approach usually combines large amounts of explicit data and different processes for analyzing. Therefore, it is important to maintain a plan of organizing and analyzing the data in a timely fashion (Merriam, 1998; Stake, 1994, 1995; Yin, 2003). Thus, I conducted immediate post-collection analysis. According to Stake (1995), analyzing the data is as “a matter of giving meaning to first impressions as well as to final compilations” (p. 71). To ensure the quality of the first impression, the data analysis must be conducted immediately. That to allowed questions to be refined and new avenues of inquiry to develop as I was collecting the data alongside data analyzing (Pope, Ziebland, & Mays, 2000).

Data Collection

The data collection was conducted during the summer and fall (starting from August to December) of 2022 via a survey questionnaire followed by interviews.

As this research aimed to collect the points of view of a variety of participants representing the special education sector in Saudi Arabia, the survey data and the

interviews were collected from teachers of inclusive classrooms and special education teachers who were involved with the inclusive classrooms.

Quality assurance

According to a significant number of published articles in the body of literature of research inquiry, a much-debated topic is the quality of mixed methods research (Fàbregues et al., 2021). Though mixed-method research is considered a relatively new development, it has grown rapidly in use and popularity among researchers, particularly in the social sciences. Hence, it is critical to demonstrate the objectivity, validity, and reliability of the methods and results of this study in terms of quality assurance. This research was therefore adopt the most common means of quality assurance by evaluating the quality, reliability, and validity of both quantitative and qualitative data and results using separate pathways, applying procedures specific to each research tradition (Fàbregues et al., 2021; Garman, 1996; Heigham & Croker, 2009).

Thus, in addition to the basic criteria, this research plan followed the guiding principles that were recommended by Northcote (2012):

- **Contributory** to advancing wider knowledge or understanding about policy, practice, theory, or a particular substantive field. In this study, the policy of the educational system of Saudi Arabia was illustrated based on the teachers' interviews. Indeed, the study demonstrated teachers' role and practices in inclusive classrooms.
- **Rigorous** in conduct through the systemic and transparent collection, analysis, and interpretation of qualitative data. In this study, the data collecting and analyzing plan and processes were demonstrated clearly and it followed rigorous approaches.

- **Defensible** in design by providing a research strategy that can address the evaluative questions posed. In this study, the research design addressed the research questions.
- **Credible** in claim through offering well-founded and plausible arguments about the significance of the evidence generated. This point was addressed in the result and discussion.
- **Affective** in nature by acknowledging the excitement associated with research discoveries, the emotional involvement of the participants and my enthusiasm. This aspect was illustrated from the participants' responses.

Quantitative method analyzing (Data from the survey)

The online survey was designed by me after viewing the theoretical framework and reviewing the published literature related to the practices of special education teachers regarding to the implementation of UDL, to benefit from it in the design of the questionnaire. I then was able to identify some aspects related to the practices of special education teachers after examining the theoretical framework and previous studies, and its most important dimensions and fields, and methods of measurement to collect salient information regarding participants' years of teaching experience, grade levels taught, and the number of years they participated in inclusive classrooms. Then the online survey focused on questions about the philosophy of inclusive classrooms, teaching methods used in inclusive classrooms, and the curriculum and the environment of inclusive classrooms (see Appendix A).

As noted above, teachers who were involved with the inclusive classrooms in Saudi Arabia responded to survey questions based on a Likert scale measurement. According to Boone and Boone (2012), a Likert scale is a component of a series of four or more (five in this study) Likert-type items that are combined into a single composite

score or variable during the data analysis process which measures the most frequent responses to questions. This measurement assumes that the strength and intensity of an attitude is linear on a continuum from strongly agree to strongly disagree. Further, I assumed that attitudes can be self-measured by the respondent when they are completing the questionnaire (Beck, 2014; Tanujaya et al., 2023).

According to Dillman et al. (2014), the most suitable way to select participants for survey data is to have a frame that contains members of the population. Since the sample of teachers for the survey was planned to be selected from the educational environment in Saudi Arabia, I required the approval of the appropriate Saudi government authority in addition to ethics approval from Indiana University. Therefore, I contacted the Ministry of Education in Saudi Arabia for an official letter (see Appendix D that authorized me to make direct contact with school principals, teachers, and educational institutions in Saudi Arabia aiming to distribute the survey).

Data analysis was done with an assistant specialist who applied the statistical methods used. The assistant has a Ph.D. in psychology and mental health he works in the field of education and psychology and is interested in educational research. He specialized in special education, which is a field that cares about teaching and rehabilitating people with disabilities or special needs. He has research interests in this field and has authored three books and many research papers in special education. He is also a proficient statistical analyst. and has analyzed data from psychological and educational research using programs such as SPSS, AMOS, and JASP. He aspires to contribute to the development of knowledge and practice in the field of special education.

Pilot Study

A pilot study was conducted in one of the graduate-level classes at the Indiana University School of Education. The participants in the pilot study were six international students who were native Arabic speakers and were fluent in English language. The reasons for the pilot study were to ensure the validity of the research tools in relation to multiple considerations, including the translation of the questionnaire and estimation of the time required for the survey which was determined to be between 8-10 minutes. In addition, the pilot study aimed to improve the validity of the study.

Study Instrument

In this study, I used a questionnaire to evaluate the practices of special education teachers in the guide of universal design for learning (prepared by me)

Description and objective of the questionnaire

The questionnaire aimed to identify the evaluation of the practices of special education teachers, and the tool consisted of 32 single questions in its final form, distributed on three axes, the first axis was principle of engagement and consisted of 12 phrases. The second axis was principle of curriculums and the learning environment in the inclusive classrooms, which consisted of 10 phrases. The third axis was the principle of teaching methods in the inclusive classrooms and consisted of 10 phrases and the independent variables included the subject of study, gender, academic stage, and teaching experience.

Steps and stages of preparing the questionnaire:

I followed four steps in preparing the questionnaire:

1. The first step consisted of reviewing the established academic literature to explore the appropriate theoretical framework and history related to the practices of special education teachers to help guide the design of the questionnaire.

2. In the second step, I identified some aspects related to the principles of UDL and the practices of special education teachers.
3. In the third step, a number of previous questionnaires were used as examples for development of vocabulary and phrases or were modified to suit the specific cultural context of the research sample for this study. Accordingly, 32 single questions were formulated in the preliminary study questionnaire.
4. I (in the pilot study) presented the questionnaire to a group of doctoral level students of special education who could speak both Arabic and English fluently. This enabled an evaluation of the validity and clarity of the questions, the extent of their affiliation with the topic of enquiry, and their ability to measure the responses of respondents, and the extent of the soundness of the wording. From this evaluation, the necessary modifications and the final form of the questionnaire was determined. Thus, the questionnaire consisted of 32 items in its final form aligned with choices for the respondents comprised of a Likert quintuple scale (strongly agree, agree, neutral, disagree, strongly disagree),

Metrics characteristics of the resolution: First: The authenticity of the questionnaire

Internal consistency: The internal consistency of the questionnaire for evaluating the practices of special education teachers was verified using the universal design for learning, by calculating the Pearson correlation coefficient between the score of each item and the total score of the axis to which to which the items on the survey correlate with UDL principles , with the deletion of the item score from the axis score, on a sample of 30 teachers. Table 4 shows the results of the calculation.

Table 8

Pearson's Correlation Coefficient Values Between the Score of Each Indicator and the Total Degree of the Axis to Which it Belongs.

Integration Classes	Curriculum and learning environment	Teaching methods in integration classes	coefficient Link	M	coefficient Link
1 *	3	1 *	0.821*	23	0.887**
2 *	4	1 *	0.756*	24	0.909**
3 *	5	1 *	0.768*	25	0.837**
4 *	6	1	0.841*	26	0.872**
5 *	7	1 *	0.838*	27	0.838**
6 *	8	1 *	0.845*	28	0.903**
7	9	1 *	0.897**	29	0.874**
8 *	0	2	0.723*	30	0.857**
9 *	1	2 *	0.873*	31	0.867**

	1	0.807*	2	0.805*		
0	*		2	*	32	0.807**
1	*	0.657*				
2	*	0.709*				

** Value function at 0.01 * Value function at 0.05

It is clear from Table 8 that the values of the correlation coefficients between the degree of the singular and the total degree of the axis to which it belongs at 0.01, which indicates that the vocabulary represents the axis to which it belongs. Therefore, there is internal consistency, which gives an indication that the resolution has a high credibility coefficient.

Internal consistency (dimension with overall resolution score)

The correlation coefficients were calculated using Pearson's coefficient between the correlation of each dimension with the total degree of the resolution, as shown in Table 9.

Table 9

Pearson's Correlation Coefficient Between the Degree of Each Dimension and the Total Degree of the Resolution

Dimensions	Correlation	Significance
	coefficient	level
Integration Classes	0.785**	0.01
Curriculum and learning environment	0.874**	0.01
Teaching methods in integration classes	0.827**	0.01

** D at significance level 0.01

It is clear from Table 9 that the values of the correlation coefficients between the degree of each axis and the total degree of the resolution are 0.01, which indicates that the axes measure what the resolution measures as a whole. Therefore, there is internal consistency, which gives an indication that the resolution has a high credibility coefficient.

Second: Stability of a resolution

The stability of the questionnaire for evaluating the practices of special education teachers in the current study was verified in two ways:

A - Cronbach's alpha method

B Half segmentation: by calculating Pearson's correlation coefficient between the two halves and correcting it with the Cyberman-Brown equation, and the results came as in Table 10.

Table 10

Values of Stability Coefficients for the Questionnaire to Evaluate the Practices of Special Education Teachers in the Light of the Comprehensive Design of Education

Axes	Alpha - Cronbach	Half Hash
Practices in inclusion classes	0.789	0.767
Curriculum and learning environment	0.847	0.827
Teaching methods in integration classes	0.837	0.804
Total Grade	0.894	0.872

- Weak Less 0.5, Medium Between 0.5-0.7, Greater High 0.7♦♦

It is clear from Table 10 that the values of the stability coefficients calculated by the Cronbach alpha method amounted to 0.894 and the values of the stability

coefficients calculated by the half-fractionation method amounted to 0.872, which are high stability values, indicating that the resolution has a high degree of stability.

Correction of the resolution

By determining the response system on the vocabulary of the questionnaire, as well as the correction key, where I formulated for each item five responses, namely (strongly agree - agree - neutral - disagree - strongly disagree) and the order of grades (5-4-3-2-1) and to judge the evaluation of the practices of special education teachers the arithmetic averages were relied on, through the equation: Category range = (highest value - lowest value) divided by the number of options, that is, the category range = $5-1 = 4 \div 5 = 0.8$ Thus, the criterion for judging was as follows:

- Items with averages between (1) and less than (1.8) have a very poor level of approval.
- Items with averages between (1.8) and less than (2.6) have a poor approval level.
- Items with averages ranging between (2.6) and less than (3.4) have an average level of approval.
- Items that received averages ranging between (3.4) and less than (4.2) have a high level of approval.
- Items with averages ranging from (4.2) and above have a very high level of approval.

Study procedure:

The following steps and procedures were followed to apply the study tools in the field:

1. Reviewing previous studies and references related to the subject of the current study, as well as other measures that were used to measure the study

variable, in order to determine the title of the study and its problem, and the theoretical framework.

2. A detailed plan was made for the subject to be studied, and it was presented to the faculty members, which was approved after the proposed amendments by the Department Council at the College of Education in the specialty of special education.

Qualitative method analyzing (Interview Data)

Yin (2002) states that the process of analyzing the qualitative data “consists of examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study” (p. 109). More specifically, Pope, Ziebland and Mays (2000) outline a five-stage procedure for analyzing the data in the qualitative framework approach, those five stages are being adapted by me as a plan for analyzing the data from the interviews:

1. Familiarization: immersion in the raw data (or typically a pragmatic selection from the data) in this stage I familiarized myself with the data by listening to tapes, reading transcripts, studying notes, and so on, to find the key ideas and recurrent themes.
 - At this stage, I assigned a graduate student to convert the audio interviews into written text. I then reviewed the written transcripts and ensure the quality of the transcript comparing to the audio recording. A total of five transcripts were qualified to be included in the study.
 - After getting familiar with the data and have it typed the first step in dealing with the data was translating the transcript from Arabic (the language that was used during the interview) into English(the language of the research) The translation was done by a Ph.D. graduate student who is fluent in both Arabic and English. She majored in English and graduated from Georgetown University's Department of Linguistics.

2. Identifying a thematic framework: identifying all the key issues, concepts, and themes by which the data can be examined and referenced.
 - the first round of coding was done by me, and the identification of the themes was found.
 - the second round of coding was done by a graduate student from the major of special education, who agreed on the same themes.
 - The codes were identified based on reading the transcribes while taking in mind the principles of UDL.
3. Indexing: applying the thematic framework or index systematically to all the data in textual form by annotating the transcripts with numerical codes from the index, supported by short text descriptors to elaborate the index heading.
4. Charting: rearranging the data according to the appropriate part of the thematic framework to which they relate and forming charts.
5. Mapping and interpretation: using the charts to define concepts, map the range and nature of inclusion classrooms, create typologies, and find associations between themes with a view to providing explanations for the findings. The process of mapping and interpretation is influenced by the original research objectives as well as by the themes that have emerged from the data themselves. (p. 116)
 - the coding of the data was then completed and reviewed afterward by me and two graduate students.

These procedures were used to organize the data as it was collected. Applying those procedures made a fine line between data collection and analysis, which aided in addressing the task of simultaneous collection and analysis.

Summary

The goal of this mixed method study is to use semi-structured interviews and online survey methods to examine in-depth the teaching practices of Saudi teachers in inclusive classrooms in Saudi Arabia. The primary aim of the study is to help evaluate those teaching practices based on the principles of UDL. The rationale for the study is the need for teachers to understand and recognize the importance of following UDL practices, which enable all students, including those with learning disabilities or barriers, to achieve successful learning outcomes from the school curriculum. Therefore, the study should assist and support the teaching practice to determine and acknowledge if teachers are applying the principles of UDL.

This study aimed to describe the practical strategies and necessary support teachers can use and discover if any of these practices are currently being used, even if not intentionally for the effective implementation and sustainability of the UDL processes. Also important to the study is investigating the leadership support that is needed during implementation of UDL, as well as identifying the challenges teachers likely to face while teaching students with disabilities in inclusive settings. The implementation of the teaching practices based on UDL may help facilitate teachers in the integration and sustainability of UDL in classrooms by providing them with the ability to practice UDL with effectiveness and efficiency in the future. Therefore, outcomes of the study on the applicability of UDL in Saudi classrooms and articles published by me in refereed journals may assist in informing teaching faculty, school administrators, curriculum designers, and the Ministry of Education of Saudi Arabia

CHAPTER 4: PRESENTATION AND DISCUSSION OF STUDY RESULTS

This chapter summarizes the findings from this study which examined the evaluation of the teachers level of attitudes to UDL teaching practices using universal design for learning in special education classrooms in Saudi Arabia. An illustration of the mixed method research findings is presented beginning with quantitative findings in part one based on the survey and then qualitative findings in part two based on interviews.

Part 1: Findings of the Quantitative Data Analysis

This part of the chapter deals with the presentation of the results of the survey through statistical methods and treatment arranged according to the research questions of the study, and the interpretation of teacher responses in the light of the theoretical framework and previous studies. Presentation of the quantitative results begins by addressing the main question, which states: “To what extent do Saudi teachers perceive the importance/effectiveness of UDL practices?”

To answer this question, I calculated the frequencies, percentages, arithmetic averages, standard deviations and ranks of the responses of special education teachers on the survey questionnaire for evaluating the beliefs and perceptions about UDL practices of special education teachers as implemented in their classrooms. These computations are shown in Table 11.

Table 11

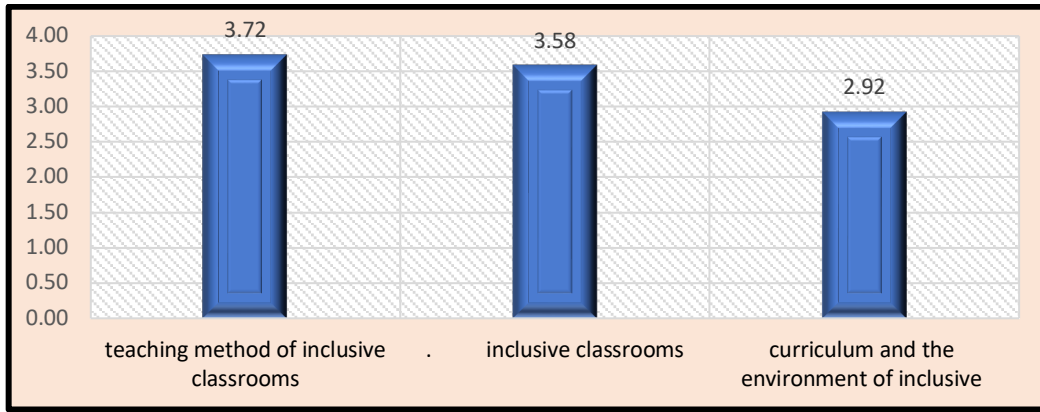
Results of the Arithmetic Mean and Standard Deviation of the Evaluation of the Number of Teachers Who Answered “Agree” and “Strongly Agree” to Questions About the Efficacy of UDL Principles.

Axes	Average Deviation		Relative weight	Level	Order
Teaching methods in integration classes	3.72	0.51	74.5%	High	1
Practices in inclusion classes	3.58	0.48	71.6%	High	2
Curriculum and learning environment	2.92	0.59	58.4%	Medium	3
General arithmetic mean	3.4090	0.42244	68.2%	High	

It is clear from Table 11 that the level of agreements about the beliefs about UDL practices of special education teachers in the inclusive classrooms came with a high degree with an average of 3.4090 and a relative weight of 68.2%. The axis of teaching methods in the inclusion classrooms came in first place, followed by the axis of practices in the inclusion classrooms, followed by the curricula and the inclusive learning environment. Figure 4 illustrates the order of axes.

Figure 4

Order of the Axes of Evaluating the Teachers Beliefs of the level of attitudes to UDL Practices of Special Education Teachers Related to UDL



Presentation of the results of the first sub-question:

"What is the assessment of the level of attitudes to UDL practices of special education teachers regarding the principle of engagement in the inclusion classes?"

To answer this question, I calculated the frequencies, percentages, arithmetic averages, standard deviations and ranks of the responses of special education teachers on the item of the axis of the level of attitudes to UDL practices of special education teachers in the inclusion classrooms, as shown in Table 12.

Table 12

Results of the Arithmetic Mean and Standard Deviation of the Items of the First Axis Practices of Special Education Teachers (in Descending Order)

M	Phrases	Average	Deviation	Weight	Level	Order
5	Including special education classes in public schools is important to help develop awareness of others.	4.283	0.713	85.7%	Very high	1
8	Integrating students with moderate and mild disabilities into the classroom helps general class students connect with friends with special needs.	4.112	0.850	82.2%	High	2

11	The obstacle to successful inclusion classes is the appropriate teaching methods for students of different levels.	3.901	0.890	86%	High	3
10	Inclusion classes are the solution to the problems of lack of communication between students with special needs and their friends in the general classroom.	3.868	0.940	82%	High	4
1	Inclusion classes are the best place to offer equal educational opportunities to students of all levels.	3.836	1.032	78%	High	5
9	Inclusion classes are a suitable environment to prepare all students for future careers	3.737	0.933	77%	High	6
12	Inclusion classes help teachers deliver materials in innovative and effective teaching methods	3.724	0.870	77%	High	7
2	Students with moderate and mild disabilities are supposed to receive their education in general classrooms	3.553	1.103	75%	High	8
4	Students with moderate and mild disabilities perform better when they	3.342	1.049	75%	Medium	9

	receive instructional services in general classrooms.					
3	Currently, students with moderate and mild disabilities receive educational services that suit their levels and abilities.	3.217	0.969	71%	Medium	10
6	Integrating students with moderate and mild disabilities into general classrooms is not necessary for their academic progress.	2.829	1.249	67%	Medium	11
7	Integrating students with moderate and mild disabilities into general classrooms often serves students with disabilities only and not others.	2.579	1.058	64%	Weak	12
	General arithmetic mean	3.582	0.483	57%	High	

Table 12 illustrates that the level of beliefs about practices of special education teachers related to UDL principle of engagement was high ($M=3.58$, $SD=0.48$), with a relative weight of 72%. The Table 12 data also reveals the highest averages represented in item 5, which states that "The inclusion of special education classes within public schools is important to help develop awareness of others" ($M = 4.283$, $SD = 0.713$). With a relative weight 86%, item 5 has achieved a very high response score from the point of view of special education teachers, followed by item 8, which states that "The inclusion of students with moderate and mild disabilities into the classroom helps students of general classes to communicate with their friends with special needs" ($M =$

4.112, SD = 0.850). With a relative weight 82%, item 8 has achieved a high degree of response from the point of view of special education teachers.

The Table 12 data also reveals the lowest averages represented in item 6, which states that "The inclusion of students with moderate and mild disabilities within the general classroom is not necessary to achieve their academic progress" (M = 2.829, SD = 1.249). With a relative weight of 57%, item 6 achieved an average response score from the point of view of special education teachers, followed by item 7, which states that "The inclusion of students with moderate and mild disabilities within the general classroom often serves students with disabilities only and not others" (M = 2.579, SD = 1.058). With a relative weight of 52% item 7 has achieved a weak response degree from the point of view of special education teachers.

Presentation of the results of the second sub-question:

The second sub-question states, "What is the assessment of the level of attitudes to UDL practices of special education teachers that are related to UDL principle of curriculum and learning environment? "

To answer this question, I calculated the frequencies, percentages, arithmetic averages, standard deviations and ranks of the responses of special education teachers to the items of the second axis. The level of attitudes to UDL practices of special education teachers related to curricula and the learning environment are shown in Table 13.

Table 13

Results of the Arithmetic Mean and Standard Deviation of the attitudes to UDL practices of Special Education Teachers Related to Curricula and the Learning Environment (in Descending Order)

M	Phrases	Average	Deviation	Weight	Level	Order
13	Curriculum is only one of several factors that affect the success of the educational process	4.072	0.854	81%	High	1
21	The current curriculum should be modified to suit the needs of all students	3.908	0.930	78%	High	2
22	Inclusion classes are the right environment for the development of all students.	3.586	0.902	72%	High	3
18	To turn general classes into inclusion classes we just need to provide a variety of teaching methods to suit all students.	2.954	1.252	59%	Medium	4
14	The curriculum is supposed to be the same for students with moderate and mild disabilities and general class students who are in the same grade.	2.763	1.285	55%	Medium	5
20	Current general curriculum can be successfully used in integration classes	2.599	1.087	52%	Weak	6
17	All teachers have sufficient resources to manage inclusion classes	2.520	1.145	50%	Weak	7
16	Students with moderate and mild disabilities need the same teaching	2.447	1.103	49%	Weak	8

	methods that are printed with their peers in public classrooms.					
15	Students with moderate and mild disabilities and general class students are supposed to be evaluated with the same assessment standards and tools.	2.211	1.172	44%	Weak	9
19	Students with moderate and mild disabilities take the same amount of time in a lesson as their peers in the general classroom.	2.151	1.002	43%	Weak	10
	General arithmetic mean	2.921	0.592	58%	Medium	

Table 13 demonstrated that the level of attitudes to UDL practices of special education teachers related to curricula and the learning environment was Moderately supported ($M=2.92$, $SD=0.59$), with a relative weight of 58% from the point of view of the teachers. The Table 13 data also reveals the highest averages represented in item 13, which states that "Curriculum is only one of several factors that affect the success of the educational process" ($M = 4.072$, $SD = 0.854$). With a relative weight of 81%, item 13 achieved a high degree of response from the point of view of special education teachers, followed by item 21, which states that "The current curricula must be modified to suit the needs of all students" ($M = 3.908$, $SD = 0.930$). With a relative weight of 78% item 21 has achieved a high response score from the point of view of special education teachers.

The Table 13 data also reveals the lowest averages represented in item 15, which states that "Students with moderate and mild disabilities and general class

students are supposed to be evaluated with the same assessment standards and tools" (M = 2.211, SD = 1.172). With a relative weight of 44%, item 15 achieved a weak response score from the point of view of special education teachers, followed by item 19, which states that "Students with moderate and mild disabilities take the same amount of time in the lesson as their peers in the general classroom" (M = 2.151, SD = 1.002). With a relative weight of 43% item 19 has achieved a weak response score from the point of view of special education teachers.

Presentation of the results of the third sub-question which states, "What is the assessment of the level of attitudes to UDL practices of special education teachers related to UDL principle of action and expression represented by teaching methods in inclusion classrooms?"

To answer this question, I calculated the frequencies, percentages, arithmetic averages, standard deviations and ranks of the responses of special education teachers on the items of the third axis level of attitudes to UDL practices of special education teachers related to teaching methods in inclusive classes, as shown in Table 14.

Table 14
Results of the Arithmetic Mean and Standard Deviation of the Teaching Methods in Inclusion Classes (in Descending Order)

M	Phrases	Average	Deviation	Weight	Level	Order
29	The goal of teachers should be to teach all students in a way that enables them to learn better, not just communicate information in traditional ways.	4.322	0.786	86%	Very high	1

	Teaching methods and teaching					
23	practices are the key to successful teaching	4.276	0.730	86%	Very high	2
	Teachers need systematic strategies					
26	and clear steps to prepare appropriate teaching methods.	4.158	0.773	83%	High	3
	Teachers need special training					
28	programs to be able to lead integration classes.	4.112	0.810	82%	High	4
	The success of students in general and people with special needs in					
30	particular depends on the teachers and the teaching methods they practice.	3.763	1.028	75%	High	5
	Special education teachers are able to					
27	manage integration classes	3.678	1.020	74%	High	6
	Integration class teachers present					
25	information in a variety of ways to cover the needs of all students.	3.645	0.864	73%	High	7
	Currently, special education teachers					
24	follow specific curricula and clear and systematic teaching methods.	3.401	0.978	68%	High	8

Teaching students with special needs						
31	requires the same efforts as teaching inclusion classes.	3.007	1.171	60%	Medium	9
Choosing the appropriate teaching methods and educational practices for students is the responsibility of teachers only						
32		2.882	1.239	58%	Medium	10
General arithmetic mean		3.724	0.512	75%	High	

Table 14 shows the level of attitudes to UDL practices of special education teachers related to teaching methods was high ($M = 3.72$, $SD = 0.51$) with a relative weight of 74% from the point of view of the teachers. The Table 14 data also reveals the highest averages represented in item 26, which states that "Teachers need systematic strategies and clear steps to prepare appropriate teaching methods" ($M = 4.158$, $SD = 0.773$). With a relative weight of 83%, item 26 achieved a high degree of response from the point of view of special education teachers, followed by item 28, which states that "Teachers need special training programs so that they can lead inclusive classes" ($M = 4.112$, $SD = 0.810$). With a relative weight of 82%, item 28 has achieved a high degree of response from the point of view of special education teachers.

The table also reveals the lowest averages represented in item 10, which states that "Teaching students with special needs requires the same efforts as teaching inclusion classes" ($M = 3.007$, $SD = 1.171$). With a relative weight of 60%, item 10 has achieved an average response score from the point of view of special education teachers, followed by item 32, which states that "The choice of teaching methods and appropriate educational practices for students is the responsibility of teachers only" (M

= 2.882, SD = 1.239). With a relative weight of 58%, item 32 has achieved an average response score from the point of view of special education teachers.

Presentation of results on the fourth sub-question of the study, which states: “Is there a difference in the level of attitudes to UDL practices of special education teachers that is attributed to the variable of teaching experience?”

To find out the differences between the responses of special education teachers in the level of attitudes to UDL practices attributed to the variability of teaching experience, the moderation of the distribution was verified using the Kolmogorov-Smirnov test, as shown in Table 15.

Table 15

Kolmogorov-Smirnova Tests of Normality Test Value

Axes	Groups	Statistic	Push	Sig.
Practices in inclusion classes	Less than five years	0.114	40	200*
	From five years to ten years	0.126	50	0.045
	More than 10 to 15 years old	0.073	30	200*
	More than 15 to 20 years old	0.151	16	200*
	More than 20 years	0.142	16	200*
Curriculum and learning environment	Less than five years	0.206	40	0.000
	From five years to ten years	0.101	50	200*

	More than 10 to 15 years old	0.129	30	200*
	More than 15 to 20 years old	0.110	16	200*
	More than 20 years	0.224	16	0.031
	Less than five years	0.173	40	0.004
	From five years to ten years	0.144	50	0.012
Teaching methods in inclusive classes	More than 10 to 15 years old	0.101	30	200*
	More than 15 to 20 years old	0.160	16	200*
	More than 20 years	0.139	16	200*
	Less than five years	0.168	40	0.006
	From five years to ten years	0.083	50	200*
Total of participants' years of experiences	More than 10 to 15 years old	0.114	30	200*
	More than 15 to 20 years old	0.133	16	200*
	More than 20 years	0.261	16	0.005

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

It is clear from Table 15 that the degrees of responses of special education teachers in the level of attitudes to UDL practices of special education teachers can be

attributed to the variability of teaching experience. Some dimensions are statistically significant, which indicates the lack of moderation of the normal distribution, and a large variation between groups. Therefore, the Kruskal-Wallis test was used as one of the non-parametric methods due to the lack of moderation of distribution. The results of this test are shown in Table 16.

Table 16

Kruskal-Wallis Test Results to Indicate Differences in the level of attitudes to UDL Practices of Special Education Teachers That is Attributed to the Variable of Teaching Experience

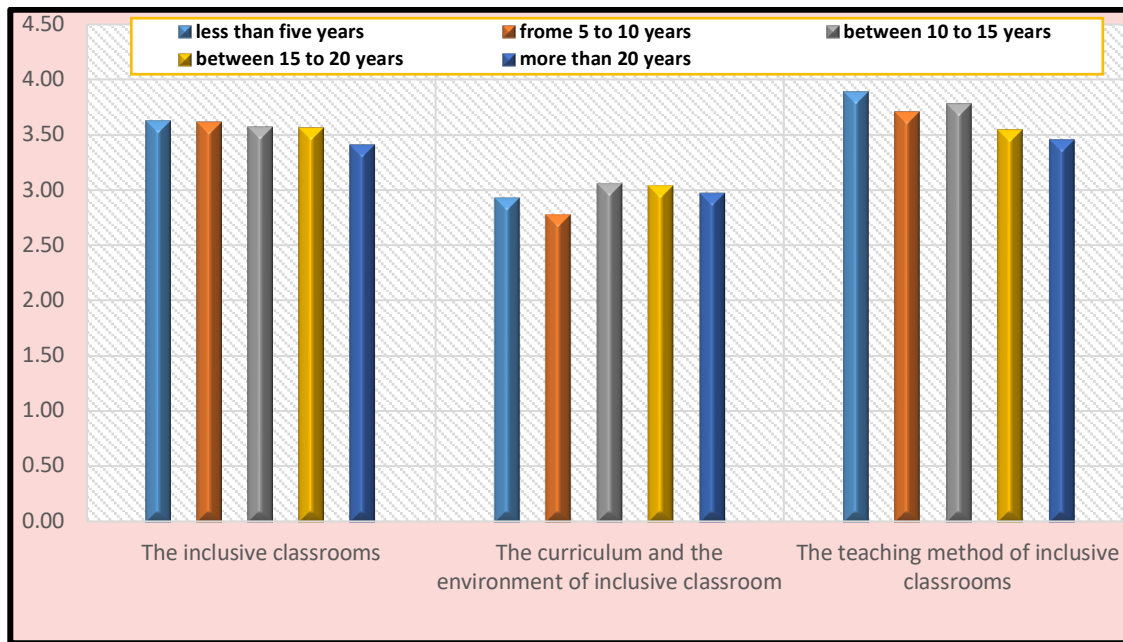
Experience	Groups	N	Mean Rank	Kruskal-Wallis H	Push	Asymp. Sig.
Practices in inclusion classes	Less than five years	40	78.58	3.708	4	0.447
	From five years to ten years	50	80.43			
	More than 10 to 15 years old	30	75.43			
	More than 15 to 20 years old	16	80.31			
	More than 20 years	16	57.22			
Curriculum and learning environment	Less than five years	40	75.11	6.553	4	0.162
	From five years to ten years	50	65.32			
	More than 10 to 15 years old	30	87.12			
	More than 15 to 20 years old	16	88.19			
	More than 20 years	16	83.31			
Teaching methods in	Less than five years	40	88.55	9.045	4	0.060
	From five years to ten years	50	74.41			
	More than 10 to 15 years old	30	81.35			

integration	More than 15 to 20 years old	16	68.38			
classes	More than 20 years	16	51.94			
Total of	Less than five years	40	83.14			
participants'	From five years to ten years	50	74.21			
years of	More than 10 to 15 years old	30	80.85	5.241	4	0.263
experiences	More than 15 to 20 years old	16	80.31			
	More than 20 years	16	55.09			

It is clear from Table 16 that the results of Kruskal Wallis show an absence of statistically significant differences in the attitudes to UDL practices of special education teachers that can be attributed to the variable of teaching experience. Where the value of Kruskal Wallis is canceled, $\chi^2(4) = 5.241$, $p = 0.263$ this means that the variable of teaching experience does not affect the level of attitudes to UDL practices of special education teachers. The graph in Figure 5 shows that result.

Figure 5

Graph Illustrating That the attitudes to UDL practices of Special Education Teachers According to the Variable of Teaching Experience



Presentation of results related to the fifth sub-question of the study, which states: “Is there a difference in the attitudes to UDL practices of special education teachers which is attributed to the variable of the school stage?”

To find out the differences between the responses of special education teachers in the attitudes to UDL practices of special education teachers the variable of the school stage, the moderation of the distribution was verified using the Kolmogorov-Smirnov test, as shown in Table 17.

Table 17

Kolmogorov-Smirnova Tests of Normality Test Value

Axes	Groups	Statistic	Push	Sig.
Practices in inclusion classes	Kindergarten	0.166	8	200*
	First, second, and third grade	0.084	48	200*

	Fourth, fifth and sixth grades	0.095	54	200*
	Middle School	0.139	22	200*
	High School	0.175	20	0.108
	Kindergarten	0.248	8	0.159
Curriculum and learning environment	First, second, and third grade	0.161	48	0.003
	Fourth, fifth and sixth grades	0.121	54	0.046
	Middle School	0.182	22	0.057
	High School	0.098	20	200*
	Kindergarten	0.206	8	200*
	First, second, and third grade	0.123	48	0.068
Teaching methods in integration classes	Fourth, fifth and sixth grades	0.122	54	0.042
	Middle School	0.107	22	200*
	High School	0.141	20	200*
	Kindergarten	0.185	8	200*
Total of participants' years of experiences	First, second, and third grade	0.131	48	0.039
	Fourth, fifth and sixth grades	0.134	54	0.017
	Middle School	0.150	22	200*

High School	0.131	20	200*
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*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

It is clear from Table 17 that the degrees of responses of special education teachers in the attitudes to UDL practices of special education teachers are attributed to the variable of the school stage. Some dimensions are statistically significant, which indicates the lack of moderation of the normal distribution, and there is a large variation between groups. Therefore, the Kruskal-Wallis test was used as one of the non-parametric methods due to the immoderation of distribution, as shown in Table 18.

Table 18

Kruskal-Wallis Test Results for the Significance of Differences in the attitudes to UDL practices of Special Education That is Attributed to the Variable of the School Stage

Axes	Groups	N	Mean Rank	Kruskal-Wallis H	Push	Asymp. Sig.
Practices in inclusion classes	Kindergarten	8	100.00	10.033	4	0.040
	First, second, and third grade	48	77.86			
	Fourth, fifth and sixth grades	54	81.54			
	Middle School	22	51.75			
	High School	20	77.45			
Curriculum and learning environment	Kindergarten	8	57.25	9.192	4	0.056
	First, second, and third grade	48	86.94			

	Fourth, fifth and sixth grades	54	81.01			
	Middle School	22	60.75			
	High School	20	64.30			
	Kindergarten	8	73.19			
	First, second, and third grade	48	84.92			
Teaching methods in integration classes	Fourth, fifth and sixth grades	54	75.31	3.059	4	0.548
	Middle School	22	69.11			
	High School	20	68.98			
	Kindergarten	8	78.00			
	First, second, and third grade	48	82.84			
Total of participants' years of experiences	Fourth, fifth and sixth grades	54	80.13	4.764	4	0.312
	Middle School	22	61.68			
	High School	20	67.18			

It is clear from Table 18 that the results of Kruskal Wallis to the absence of statistically significant differences at the level of 0.05 in the attitudes to UDL practices of special education teachers. This result is attributed to the variable of the school stage, where the value of ($\chi^2(4) = 4.764, p = 0.312$) is canceled, which means that the school stage variable does not affect the level of attitudes to UDL practices of special education teachers, except for the level of attitudes to UDL practices related to

inclusion classes. There are statistically significant differences at the level of 0.05 and, to determine the direction of the differences, the Mann-Whitney test (U) was applied, the results of which are shown in Table 19.

Table 19

Results of the Mann-Whitney Test (U) to Determine the Differences in the Axis of Attitudes to UDL practices Related to Inclusion Classes That are Attributed to the Variable of the School Stage

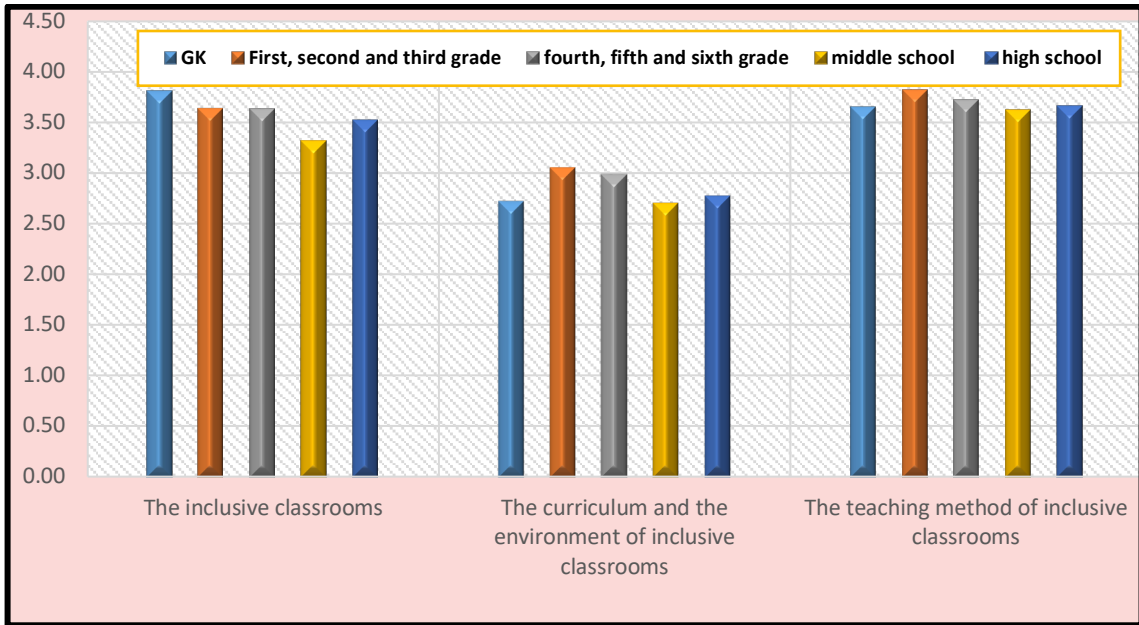
Comparison Groups	Stage	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
First comparison	Kindergarten	8	34.94	279.50	140.5	-1.208	0.227
	First, second, and third grade	48	27.43	1316.50			Non-function
Second comparison	Kindergarten	8	38.94	311.50	156.5	-1.254	0.210
	Fourth, fifth and sixth grades	54	30.40	1641.50			Non-function
Third comparison	Kindergarten	8	22.06	176.50	35.5	-2.472	0.013
	Middle School	22	13.11	288.50			Function at (0.05)
Fourth comparison	Kindergarten	8	17.56	140.50	55.5	-1.249	0.212
	High School	20	13.28	265.50			Non-function
Fifth comparison	First, second, and third grade	48	50.25	2412.00	1236.0	-0.403	0.687
	Fourth, fifth and sixth grades	54	52.61	2841.00			Non-function

Sixth comparison	First, second, and third grade	48	39.04	1874.00	358.0	-2.155	0.031 Function at (0.05)
	Middle School	22	27.77	611.00			
Seventh comparison	First, second, and third grade	48	34.65	1663.00	473.0	-0.094	0.925 Non-function
	High School	20	34.15	683.00			
Eighth comparison	Fourth, fifth and sixth grades	54	43.11	2328.00	345.0	-2.860	0.004 Function at (0.05)
	Middle School	22	27.18	598.00			
Ninth comparison	Fourth, fifth and sixth grades	54	37.92	2047.50	517.5	-0.275	0.783 Non-function
	High School	20	36.38	727.50			
Tenth comparison	Middle School	22	18.18	400.00	147.0	-1.842	0.065 Non-function
	High School	20	25.15	503.00			

It is clear from Table 19 that there are statistically significant differences in the level of attitudes to UDL practices of special education teachers related to inclusive classes according to the variable of the school stage between middle school teachers and between kindergarten and primary school in favor of the first grade (kindergarten, primary stage). The graph in Figure 6 shows this result.

Figure 6

Illustrates the attitudes to UDL practices of Special Education Teachers According to the School Stage Variable



Summary of the Key Quantitative Findings

1. The level of participants' beliefs about the agreement of the practices of special education teachers align with UDL principles came with a high degree with an average of 3.4090 and a relative weight of 68.2%. Therefore, the axis of teaching methods in inclusive classes came in first place, followed by the axis of practices in inclusive classes, followed by curricula and the learning environment.
2. The level of participants' beliefs about the agreement practices of special education teachers related to inclusion was high ($M = 3.58$), with a relative weight of 72%.
3. The level of participants' beliefs about the agreement of practices of special education teachers related to curricula and the learning environment of education was medium ($M = 2.92$), with a relative weight of 58% from the teachers' point of view.
4. The level of participants' beliefs about the agreement of special education teachers related to teaching methods in integration classes was high. ($M = 3.72$, with a relative weight (74%).

5. There were no statistically significant differences in the participants' beliefs and attitudes of special education teachers that is attributed to the variable of teaching experience.
6. There were no statistically significant differences in attitudes to UDL practices of special education teachers that is attributed to the variable of the school stage, except for the axis of the attitudes to UDL practices of special education teachers related to inclusive classes.
7. There were statistically significant differences between middle school teachers and kindergarten and primary school in favor of the first grade (kindergarten, primary stage).

Part 2: Findings of the Qualitative Data Analysis

4.1 Introduction

This study used a general inductive approach to analyse the qualitative data acquired from interviews with teacher participants. Collection and analysis of the data was based on and consistent with the research questions, and the theoretical position and analytic framework of the study. Emerging themes (or categories) were identified and developed from interview transcripts by reading them repeatedly to determine meanings and how these fitted with developing themes.

Transcripts were also read horizontally, which involved grouping segments of text by theme. Once no new themes were observed emerging in this process, it was decided that saturation point had been achieved and that all the major themes had been recorded and identified (Lowe et al., 2018). This analysis process enabled the identification of new themes, as well as the development of themes that had already been identified, until an understanding of the full range of participants' perspectives had been achieved. This sequence led to allocating significant interview quotes relevant to particular themes or subthemes, which are included in this part of the chapter.

The structure of the chapter is based on the six key themes which were identified in the data and several subthemes (see Table 4.1) arranged in order of frequency in responses, including and supported by transcript quotations from participants relevant to these themes.

4.2 Theme 1: The Current State of Inclusive Education in Saudi Arabia

The first theme was characterized by the experiences of participants in their inclusive classrooms, together with the knowledge and skills they had acquired leading to understandings and perspectives. Participant interview responses generally concurred that there are currently three parallel types or forms of education policy approaches

applied in Saudi Arabia for neurodivergent (ND) students with intellectual disabilities (ID), learning difficulties (LD), or emotional or behavioral disorders, for which there are corresponding special educational needs (SEN):

1. Full-time inclusive classes for students with a mild disability, such as learning disabilities (e.g., autism, dyslexia, epilepsy), ADHD, and mild ID, who attend general classes alongside their non-disabled peers.
2. Part-time inclusive classes where students with mild disabilities receive supplemental academic support in separate special education classes led by trained teachers; and
3. Separate care centers that provide the services needed for the children who have severe disabilities, such as profound intellectual disabilities, and some of the very difficult cases, such as disruptive behavioral disorders. In this case, the inclusion practice would only take place in specific occasions, but not daily.

These three types of disability education policy approaches in Saudi Arabia for students with learning disabilities and disadvantages are mirrored to a degree with education systems elsewhere in the world, with some variations based on interpretations, intersectionality, and country-specific guidelines (Mezzanotte, 2020; OECD, 2020; Saudi Vision 2030; Varsik, 2022). Generally, as with other countries, Saudi disability and inclusive education policies identify equity and inclusion as priorities alongside delivery of effective academic instruction for students. Ministry of Education policies affirm provision of equal learning opportunities and support systems for all students, including those with special needs (MOE, 2021). However, some flexibility exists in how and when the standards and measures are applied at individual schools and for individual students (Alsarawi, 2023; Florian, 2019; Mezzanotte, 2020; Ministry of Education [MOE], 2016). Thus, for the full-time inclusive classes and the

part-time inclusive classes the way of implementing the inclusion differs from one school to another based on the number of the general education teachers, special education teachers, special education students, and the available school facilities and support programs.

The participants in this study explained the first type of inclusive practice for students with mild learning disabilities in their schools which mostly takes place in classrooms with non-disabled students led by the general education teachers for the whole day. However, to ensure adequate skills development and academic achievement, these students may require extra academic support with, for example, math, reading, and writing. Therefore, the students identified as having learning difficulties have access to resource rooms two to three times a week to receive extra support from special education teachers. This arrangement was described by Teacher 2, who identified problems of assessment of students with LD and ID alongside their non-disabled peers:

Students with [mild] learning disabilities are receiving their academic instructions in the general education classrooms, however, for the skills they are showing weakness with they would be transfer to the resource rooms to get extra support based on their individual needs. It is a great support for the students, however, it is challenging for the general education teachers when it comes to the assessment, as the teacher cannot have the students be assessed in a separate evaluation since they are mainly in the general classrooms. The educational system does not support the idea of evaluating the students with mild disabilities [differently] based on their individual needs or separate way than other students. [This policy applies] unless they are receiving the instruction in a special education classroom, but at the same school building,

which is the other way of inclusion for the students who are needing more help than the students with mild disabilities. (Teacher 2)

Thus, as pointed out by Teacher 2, in the first type of disability education inclusive approach, students with mild LD are currently assessed for their academic performance on the same basis as their non-disabled peers, which may present some issues of equity, fairness, and disadvantage in the Saudi system (Abu-Alghayth et al., 2022).

In some Saudi schools, the second type of inclusive policy practice is followed where students with LD receive special education services in segregated, special classes within the same school campus, which are designed to serve those students based on their special needs. These classes are in public schools or private schools and are led by special education teachers. The special education students can be involved with their peers in the minor subjects and the school's associated activities, such as play or recreational programs, however they receive classroom academic instruction separately. This second way of performing inclusive education in Saudi Arabia was explained by Teacher 1 as the method adopted in her school:

We have in our school special education classes for the students with special needs. I used to like the idea of including the students with their peers in the same schools, especially when I see the interaction between all the students. That helps a lot with the stigma we [teachers] had in the past [in segregated schools] along with students with disability. Now all the students are equal and receive their education in the same schools.

However, I think it would be even better if the students get to be in the same class with their peers. That being said, I think we need to have trained teachers who can lead this kind of inclusive classroom. I guess we are not preparing our teachers yet to lead this kind of classroom. (Teacher 1)

As suggested by Teacher 1, there are counter arguments and differences of opinion recognized, even within the perspectives of the same teacher, about which forms of inclusive education are most appropriate in the Saudi context.

A variation on these first two forms of inclusion in the Saudi Arabia education system is the co-teaching style where a general education teacher and a special education teacher are collaborating in the same classroom. Teacher 3 explained this way of inclusion in her school:

The way I used to implement the inclusion in my old school was by working alongside with the general education teacher and prepare the lesson together.

Then during the class time, we would divide the students into two to three groups based on their level. I would focus with the students with mild disabilities while the other teacher would be with the rest. (Teacher 3)

Teacher 3 spoke of the co-teaching approach in positive terms and evidently had experienced some success in incorporating this inclusive system in her former classroom. Interestingly, when Teacher 3 moved to another school in a different city in Saudi Arabia, she attempted to implement the idea of the collaborative co-teaching, but was hampered by the perspective and lack of cooperation from her co-teacher:

It was not the same, [because] the general education teacher was not supporting the idea of collaborating. Thus, it became like she is teaching the whole class while I only sat at the side with the students who needed help and support. The system and the educational rules can be very different than reality. We have lots of great ideas that we have in our education system, however, it is mostly up to the principal and the teachers to do what they think is better for the students. (Teacher 3)

Teacher 4 agreed with Teacher 3 on the power of principals and teachers in implementing any educational programs for students with special needs:

All the inclusive programs that we have are based on the teachers' efforts, [however] some schools support the teachers, and some are not. This puts a heavy responsibility on the teachers to improve the educational program and the system in general. As a special education teacher, I do not always get the support I need to implement the inclusive teaching in the way that it is supposed to be. (Teacher 4)

Thus, it is clear that practical application and effectiveness of inclusive policies in the Saudi classroom context often depends on the level of cooperation and comprehension of teachers and school principals about how to implement inclusive approaches (Abu-Alghayth et al., 2022).

The teachers who participated in this study generally expressed the view that the educational system in Saudi Arabia has made substantial progress with the inclusion of students with disabilities based on the three forms of inclusivity that have been implemented in the schools today. It is, on the other hand, open for improvement. Considering the current state, the teacher participants concurred there is still a need for deep adjustment for the system as a whole to help the students with special needs to fully participate in the general classrooms. This result aligns with previous research about teachers, particularly special education teachers, in Saudi Arabia and their attitudes toward inclusion of students with disabilities (e.g., Al-Ahmadi, 2009; Aldosari, 2022). Overall support for inclusive education approaches was positive; however, some mixed results in the literature were also found in teachers for whom acceptance of students with disabilities was conditional on adequate training of teachers

and adequate facilities to accommodate students with special needs (Gibbs & Bozaid, 2022).

The teacher participants in the current study showed support for full-time inclusion as an equitable approach, however, they also stated that there are many existing challenges that need to be overcome to have inclusive classrooms as the most successful academic learning and social development environment for all the students.

The third type of education for students with disabilities in Saudi Arabia relates to those student individual cases with more profound learning or intellectual impairment, or with emotional disorders preventing their presence in classrooms or school campuses with non-disabled peers. These students are provided for in separate care centers dedicated to them with appropriately designed facilities, curriculum and programs, and trained staff.

4.3 The Current State of Evaluation and Assessment for Students With Disabilities in Saudi Arabia

Assessing students with special needs plays a significant role in the educational system, as it is the main process to determine if the teaching practices that have been used were effective to satisfy a student's educational needs. Thus, in this matter, Teacher 5 explained that the assessment and evaluation of students with special needs in Saudi Arabia has a designed process and guidelines (MOE, 2016) that teachers follow:

Well, now we have the academic health procedures. The state now has put in place a complete list that explains the method of evaluation, the grading system, the division of assignments, instructional practices, assignments, etc. So now, it has become standardized. It does not depend on every teacher's effort and

judgment anymore since there is rationale for the educational practice. (Teacher 5)

In the year 2017, the assessment of students with disabilities was led by the Ministry of Education (2016) and was generalized for all the schools and all types of disabilities.

Teacher 5 explained this relatively new policy and procedure:

The administration or the general Department of Special Education, in the Ministry of Education, sets frameworks for all teaching plans, and it covers all areas of special education that are included under education or provides services in education. This framework was established in 1438 (2017). So, it has been active now for approximately four or five years. And it is available for every teacher, whether an autism teacher, a speech disorders teacher, a hearing impairment teacher, an intellectual disability teacher, or even hyperactivity disorders and other fields. Approximately eight or nine domains [are included], and each one has a clear standardized framework or a road map to follow.

(Teacher 5)

Even though the assessment is generalized by the Ministry of Education and has been followed for several years, some of the teachers think that the inclusive assessment framework and guidelines are not adequate for the teachers to find the true level of student with learning difficulties or disabilities, since the capacities of these students differs widely and some may face different and often highly variable challenges in comparison to others. Thus, Teacher 3 had a different opinion regarding assessment of students with disabilities:

In my opinion, it should be different, [because] it is impossible to assess them only one time at the end. I assess them verbally and [with] written [methods], and some other times I evaluate them through a competition. Sometimes, I also

use the iPad for evaluation. I had a student who struggled with spelling, and we had a spelling program that she had to participate in, so when she used the iPad, it was easy for her to write the words she hears. However, she cannot do it with paper and pen [using handwriting]. (Teacher 3)

Teacher 5 shared her experience with the current state of assessment methods from a different perspective. She agreed with Teacher 3 about the importance of implementing a variety of ways to help the students to achieve the best of their learning. However, she agreed that every student with special needs has different abilities and that means teachers need an individual assessment plan for every student no matter whether they are receiving their education in an inclusive setting or in separated classes:

When it comes to learning disability, we have two classes a week and we do not separate them [students with LD] from the regular classroom, [instead] they attend the whole classes in inclusive classrooms settings. However, the problem now is in the method of evaluation. For example, when I ask the classroom teacher not to assess the students with learning disability on the full reading text. I inform the teacher that she needs to divide the task for them [students with LD], and she would answer me: based on what? In Noor (the electronic grading system in Saudi Arabi) I have to assess her based on skill mastering. If she masters the reading, the spelling, the writing, I will grade her as pass in the system or otherwise. The teacher does not have the authority to divide the task and give the student a pass based on her [special] needs. (Teacher 5)

In this quote, Teacher 5 refers to the Saudi Noor Education Management System (EduWave EMIS®) implemented through Integrated Technology Group (ITG) which is used in the public and private schools of the country (ITG, 2018).

Alongside assessing the students with disability, the teachers mentioned the way of the progression of their lessons in their inclusive classrooms. Teacher 2 talked about the flow of the lesson in his classroom when having students with learning disability:

First, we start with the feedback for the previous lesson, then the introduction for the new lesson. Next, the presentation for the targeted learning skill that we need to apply for the day and the last thing we have is evaluation. Evaluation is usually applied through a worksheet, because when you have a written worksheet then you have a proof of the student's work. The verbal evaluation is not enough.

We know that in some cases students with learning difficulties have sensitive personalities, they might be affected emotionally because they think that their classmates know that they have weakness in certain skills or that their friends know they can't read or write the way they do. So, how can we help those children to achieve success especially if they are in regular classrooms. (Teacher 2)

The teachers who participated in this study held differing views on the way of assessing the students either in an inclusive setting or in their special education classrooms. Some of the teachers thought they preferred to have a structured way of assessment that could help all the students to be equally evaluated, whereas other teachers thought the assessment must be based on the individual student's needs to help the students to observe their own progress and move forward to the next step of success.

4.4 Theme 2: The Challenges of Inclusive Classrooms in Saudi Arabia

Although the educational system in Saudi Arabia has achieved significant improvement since the advent of Vision 2030 aims for inclusive education commencing

in 2016 (Vision 2030, 2023), there are still some challenges that face the teachers, especially in the field of special education. Based on the interviews, the most common challenges that special education teachers mentioned can be summarized under three categories: 1) Family related challenges, 2) school related challenges, and 3) co-teaching related challenges.

The first category, family related challenges, can be summarized under two sub-challenges: a) the financial aspects that affect parents in pursuing the potential educational achievements of their children with special needs, and b) the family's awareness about disabilities and their realization of the importance of educating their children with special needs. The second category, school-related challenges, most involves: the lack of suitable places, facilities, and resources for special needs students, while the third category concerns the lack of necessary supportive and training services for teaching faculty in inclusive schools.

These latter two categories are the most challenging obstacles that face the special education teachers in Saudi Arabia, whereas the first category presents challenges for both the families and the teachers of their children.

4.4.1 Challenges That are Related to the Families of the Students with Disabilities

The involvement of families plays a major role in the educational improvement of their children, and this role is particularly important for children with special needs. On this topic, Teacher 5 emphasized the importance of the supporting role that families need to play when creating the Individual Education Plan (IEP) for their children (AL-Kahtani, 2015). She stated that in her experience there are some families who effectively involve themselves and help their children to achieve their IEP goals, whereas others do not pay the necessary attention to their children's educational needs:

The children's family and home environment play an essential role in their development. Some students lack the basic knowledge, I mean they do not even know the colors, the directions when you say right or left, so it depends a lot on their environment, their parents and what they taught them or how they treated them at home. Sometimes parents give their children good attention; however, the family cannot help their child. This is not because they do not care, but because they are actually struggling to accept their child's disabilities. Or, on the other hand, they are unable to realize their child's needs. (Teacher 5)

Similarly, Teacher 1 identified the challenges of convincing parents to recognise and respond to the special educational needs of their children while accepting that their disability may be life-long rather than transitory:

The biggest difficulty I encountered was the parents' [lack of] realization and acceptance of their child's disability and that he/she needs to be in special education for their best interest. Very few parents accept this fact. Some of them even when they do place their children in a special education classroom, they still believe that this should be temporary, and the child has to be placed [eventually] in a general classroom. This usually occurs often with students who have autism, ADD and students with learning disabilities or learning difficulties. (Teacher 1)

Thus, teachers expressed the view that the families of the children with disabilities need to be better informed about their children's learning difficulty so they will be more prepared and motivated to collaborate with the schools and the teachers. Without parental understanding and cooperation, the resulting lack of collaboration can cause the children with special needs to be denied access to the available special education programs. On this point, Teacher 4 elaborated on their experience:

In the hearing impairment program, I have a family who do not allow their child to wear or use his electronic hearing device to class, even though he already had a Cochlear implant since he was 4 or 5. The family does not allow him to use the device outside the house. I have talked to the mother more than once and she said “this device cost me 300000 Riyal, so I have to keep it safe”. I told her you paid this money so he can use it to learn not to keep it at home. This family needs to be educated on the impact of their decision on their child’s education and future in general. (Teacher 4)

Another aspect of the family challenges is the expectation of the parents about their children with special needs. According to the study participants, some of the families abandon hope and decide there is no point of education for their children with learning disabilities. Teacher 3 described how she and her colleagues felt concern for the students with special needs when they received no support or involvement from home. However, she suggested this challenge may be reducing:

So, basically, the students [with learning difficulty] sometimes would go home with their school bags and come back to school the next day and they have not even looked at the bag, checked their books, checked the homework or even read the lesson. There is no involvement or checking [by the parents]. However, it is getting slightly better since the pandemic, as mothers are more involved now and they have improved themselves academically or hired a tutor or even get help from the neighbors or the siblings. (Teacher 3)

4.4.2 Challenges That are Related to the School and the Educational System

One of the major challenges identified by teachers relating to the educational system was the lack of specific curriculum based on the special needs students that special education teachers could follow. Participants agreed on the need of a fixed

foundation plan for the students who have learning disabilities that takes into consideration the students' individual needs. Teachers suggested that the students' actual ages and their assessed cognitive and intellectual ages would allow for the adjustment of the instructional plan appropriate for the students' level to be easy to follow. However, teachers pointed out that, currently, there is no set curriculum program for students with learning difficulties which means they are responsible for creating an IEP for these students. The plan becomes the main guide for how to introduce specific skills for each student, but in instances where students are falling behind, may lack an educational foundation relevant to the whole curriculum. For example, Teacher 4 shared their story in relation to this matter of how to create individual plans for students with learning difficulties:

Now, I have a student in sixth grade who has not mastered the adding and subtracting skills yet. Therefore, it is really hard for me to manage teaching him these skills and the skills that are required based on his grade level. You can see that we do not have a fixed plan or circular that shows clearly if you have this situation you are supposed to do so and so, and what skills to focus on. All that depends on the teachers' efforts. (Teacher 4)

Another challenge that special education teachers face in schools is related to conflict in philosophy between teacher and supervisor about how to manage IEP programs for students with learning difficulties. According to the teacher participants, each party holds different points of view and goals to be achieved by the end of the school year. The school supervisors mostly define a successful school year as a year that done by achieving all the education goals that established at the beginning. On the other hand, the special education teachers view the successful school year as the year that they helped the students to master as many skills as they could, despite their

learning difficulties. Teachers recognised that some of the students with special needs can achieve all the IEP goals by the end of the school year while others cannot. For example, Teacher 2 held the view that achievement for special needs students should be based on their individual abilities; some students need more time and some repetition of lessons with different teaching strategies for skills to be mastered:

Special education depends on your teaching philosophy and what you, as a teacher, believes about your student. You know your students and understand their needs more than others. Thus, teachers designed their teaching strategies based on the students' needs. I had an experience when the supervisor asked me to change the plan to make more rapid progress, whereas [I knew] the student could not handle that amount of information in one lesson. (Teacher 2)

4.4.3 Challenges That are Related to the Collaboration Between the Teachers and the Other Service Providers

The participants agreed on the importance of the role of collaboration in co-teaching between the special education teachers and general education teachers in progressing the development of students with LD or ID. They believed that both members of the co-teacher team should work collaboratively to meet the students' IEP goals. Teacher 5 described the system of collaboration in their school, which was arranged in a number of different approaches:

We actually have patterns in co-teaching, such as pair team, and we also have the differentiated learning, learning stations, and alternative learning. We have the strategy of “the leader and the supporter “, and “the teacher and the supervisor”. These are some of the patterns that we use in the co-teaching lessons. (Teacher 5)

Teacher 5 supported the idea of co-teaching in her school. She found it helpful for both special and general education teachers if there was a purposeful plan for lessons and good communication between the teachers. She thinks it is one of the ways to improve practical inclusion for special education students and also a way to implement the principles of UDL. Teacher 5 gave an example of the dynamic of the co-teaching in her school:

We are required to apply it [co-teaching] at the intermediate level. First, we have a class to present the information and then we have another co-teaching class with the regular classroom teacher. This was applied four years ago in the elementary level. I have to be in the class with the regular classroom teacher and I have to provide information. My role in the class differs though from time to time. It could be an observation session, it could be a co-teaching lesson, it could be teaching the students in stations; it all depends on our plan of the lesson. (Teacher 5)

This example of the positive experience of Teacher 5 with co-teaching, based on some other participants' opinions, was not a consistently supportive view. Several other participants thought that general education teachers did not always understand the concepts of co-teaching. Some of the general education teachers were said to be only concerned about the overall class goals for all the students, which made it difficult to work with the special education teachers whose focus was on the students needing additional support. General teachers were believed to resent co-teaching, which they saw as taking from the normal lesson time or they might begrudge being forced to share the lesson with a special education teacher. The difficulty, Teacher 3 explained, was related to the often-uncooperative behavior in co-teaching of the general classroom teachers:

When I first moved to my current school, I spent hours trying to explain to the classroom teacher how co-teaching works and she would say, “ok, you can come to class”, as if she just wants me to come and attend the class and not co-teach with her or confuse her. A lot of classroom teachers refuse to release the students with special needs to receive one-to-one instruction [from me]. She would say, “There is no time, I am assessing her now”. In this situation, what can I do? The teacher is usually working on basic skills that I have already covered, but that is the problem: the time conflict and lack of collaboration.

(Teacher 3)

The consensus of teacher participants’ views was that this attitude from the general teachers does not only impact the students while receiving the instructions, but also impacts their evaluations of the students’ progress, including those with special needs. As long as there is not agreement on the way of evaluation, the general education teachers will continue assessing the students with special needs using the same tools as non-disabled students. Therefore, students with special needs will likely struggle to achieve successful academic outcomes because they do not receive an appropriate evaluation that is matching their individual circumstances and capabilities. Teacher 4 believed this challenge is a significant obstacle to students with LD because “both special education teacher and the general education teacher need to submit the student’s evaluation by the end of each semester”. Therefore, both teachers must be in agreement that will serve the best interests of the students with learning difficulties to ensure they can continue progressing and remain active in the education system.

In addition to the importance of collaboration between teachers inside the schools, the participants agreed on the need for collaboration between the school and the other service providers within the school and from outside. They see a gap in the

communication between the school and the family, the school and the health providers, and the school and other service providers. For example, although the participants agreed on the great health services the country provided for all the students with special needs, there was still a gap in communication between the educational system and the medical system which needs to be improved for the students' benefit.

4.5 Theme 3: Teaching Practice That Special Education Teachers Implement in Their Classrooms (UDL Related)

During interviews with the participants, I raised the topic of Universal Design for Learning (UDL) as part of the research aims, and explained the principles and guidelines of the UDL framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn (CAST, 2018). They all agreed on the importance of having a framework of teaching, such as UDL, to help the teachers design their teaching plans. They also agreed on the need of having an official guideline for their teaching practices. The participants illustrated their teaching practices in both inclusive classrooms and community-based classrooms that included students with mild disabilities and learning difficulties with different levels and abilities. They all expressed the view they are implementing some or all of the UDL principles in their classrooms. Thus, they were able to compare the principles of UDL to their current teaching practices they implement in their classrooms. However, they said they do not call it UDL or apply specific UDL in their practices in this way, as they do not have formal access to the UDL framework or approval to apply the UDL teaching tools in their schools.

Teacher 1 was highly supportive of UDL, and compared the principles of UDL to a teaching strategy that she called the individual therapeutic educational plan.

She explained the role of the plan she utilizes:

The main guidance of the teaching is individualizing the teaching practices. Instead of focusing on what is required, I focus on what is needed. If there is a case that needs individual guidance, this is additional to my daily work preparation. I mean, for example if a student achieved the competencies and skills required for him during the current semester, while another student did not achieve them, so I have to grade him based on what he achieved. And I create an individual plan for the next semester based on the student's achievement. That would be beside my normal preparation for the daily lesson for the whole class. A continuous assessment will be implemented only if the student is in first, second or third grades. If the student is in higher grade and at the middle of the semester, I observed the individual differences based on the midterms, the evaluation, and the assessment. I have to make a focused individualized plan to improve his academic level. So, I provide more class activities, I also check with his family, and I provide one to one instruction and tutorial. I also provide extensive exercises or activities through the platform he applies on, and I also do other procedures. (Teacher 1)

Teacher 3 concurred with Teacher 1 and also pointed out there are some matchings between the concepts that she applies in her teaching strategies and the principles of UDL that I described. She said even though in her school they do not officially call it UDL, she could see it can be considered as UDL related. Furthermore, Teacher 3 gave examples of the teaching and evaluation that she implements with her students:

I feel like I enjoy teaching complicated cases more than the simple ones when I apply different strategies of teaching and evaluations. For each unit or lesson we divided it based on the students' skills and abilities into three categories:

Category A, Category B, and Category C or D. Where Category B, for example, are those students who have weak abilities, and they solve certain exercises based on their abilities. that way every student will receive the strategies that match their abilities. Even with my power point presentation slides I consider the cases that I have in my class. I always have one presentation, but for each case I add one or two slides for each student of group of students' level. Sometimes, I add one teaching aid or two, based on what will work with my students. I evaluate the student several times with different evaluation styles, and I do not just evaluate her academic abilities, I cover all the disability aspects. If she has poor visual abilities, if she has poor visual memory, I start the lesson by activating her prior skills or interests. Sometimes her abilities are low and do not match her interests, so I search for a strategy that would strengthen her self-confidence. (Teacher 3)

Teacher 2 and Teacher 4 agreed on their practice of utilizing the principles of UDL in their classroom as taking advantage of knowing the individual needs of each of their students. In addition, they were taking advantage of the technology in diversifying teaching methods and the teaching aids. For example, using the white board, the different shapes, the projector, and the laptop works well, because this is the strongest and the most powerful educational stimulus for children. Teachers observed that teaching through laptops and projectors is the most powerful if used correctly in classes, as well as the importance of flexibility, especially for students with learning difficulties.

For example, Teacher 2 found that, to be effective, she planned her lessons flexibly based on the individual student's abilities and strengths, which can change:

One of my students had an excellent visual memory. I discovered that about her while the teaching was online during the COVID-19 pandemic. Thus, now that her visual memory has improved, I start my instruction with focusing on this skill to attract her attention and to make her feel confident. This explains the meaning of the treatment plan that I work on [because] when we say an individual plan, it is not just an academic plan. It is a discovery of the whole student and knowing what can support their learning, then using that as a tool for effective teaching. So basically, our teaching plan is not stable, it changes each time based on what we learn and discover about the students. (Teacher 2)

Likewise, Teacher 4 explained the process of flexibility in their teaching:

At the beginning we give them an evaluation test to assess their level and their approximate development, and when we start teaching them, we learn more about them. So, the teaching plan is not stable, you do not just develop one plan for the whole semester. To be honest sometimes we redo it twice or three times during the semester until we understand the student and see what they need. (Teacher 4)

When asking Teacher 5 about her opinion concerning the common concepts between her teaching strategies and the principles of UDL she found the concepts were similar and purposes aligned. She explained the process of designing her lessons focused on knowing the students' level to make sure that the students can understand the topics they are learning, and they can then make the appropriate generalizations of what they are learning. As the other teachers suggested, Teacher 5 emphasized the importance of having the evaluation and the generalization procedures through playing games and other fun attractive activities. This way gets the students out of the atmosphere they are always in, which is academic learning and direct instruction

Teacher 5 illustrated the teaching style in her classroom which she referred to as coinciding with UDL principles in many areas:

We start the school year by assessing the students' abilities [which enables us] to create an appropriate teaching strategy. For the students who cannot read the words, we start by focusing on the illustrations. I ask what do you notice in the picture? How many characters? What colors are there? What comes to your mind when you see this picture? I mean, she starts to build her knowledge based on the picture. If the student has high reading abilities, she begins by reading three lines, two lines, and we apply the strategy of extracting information from the text. Some of the students have the ability to write, so I apply the strategy of orthographic dictation which is writing words after teaching them to the students, and then we hide them. So, there is differentiated instruction, which looks like collaborative learning group where each student has a task to finish. I mean, one student speaks, another one writes, and another student reads, and there is cooperation between them. (Teacher 5)

Some of the teachers mentioned the teaching environments as representing of the principles of UDL. For example, Teacher 3 explained the resources room that she has as an attractive learning environment for her students:

The attractive environment [in the resources room] is different from a regular classroom, you know, it has an essential role. I mean, when the resources room becomes distinct, it is not essential that the room is colorful and so on, but diverse resources such as corners, stations, something that attracts the students, something that is not usually available in their environment. I am 100% sure that if it was a positive [UDL type] environment it would succeed. In the first place, if this comprehensive education is applied. The teacher will direct each

student to a corner. Those who have mastered this skill should go to a corner. She will then have a simple number of students who have not mastered the skills to work with them individually. (Teacher 3)

4.6 Theme 4: Teacher Preparation System in Saudi Arabia.

The participants agreed on the need of more training programs that help the teachers to be up to data with the students' needs. They see the improvements in the educational system in general around the world in many concepts, such as the technology and the teaching strategies. Thus, the participants agreed on their desire to be involved in a training program that supports their knowledge and opens the door for additional teaching practices that can help to improve the outcomes for students with learning difficulties.

Teachers mostly agreed on the positive improvement that has occurred in the last five years of Saudi Arabia's Vision 2030 education reforms. They referred to the initiatives by the Ministry of Education to provide some professional development (PD) programs for teachers, especially in the main cities. However, they observed that not all the teachers gain access to those programs, since they are mostly available in the capital centers, but not everywhere. Therefore, teachers from other cities can be nominated by their school to attend training and courses, however, the opportunities are still limited.

Teacher 5 described an organized training program in her school that is mandatory for the teachers:

In the last five years, it has become compulsory to attend PD courses, which means participating in them and transferring experience to their female colleagues. I improve by constantly doing my own research and attending the practical lessons that the administration organizes from time to time. I mean,

now there are many communication channels, such as Telegram, like Snap, where there are creative teachers, and each one presents his idea on social media. Therefore, we learn new ideas from every teacher; it is not monopolized by anyone. Now isolation is over, and everyone can share his or her knowledge. Everyone is creative, there are many lessons that are ready, you just need to adjust it to your own use you can present them with competitions, with their vocabulary, because everything you need is provided by the more knowledgeable teachers, even the simple details are presented. The teacher can just download the lesson and present it to her students. What I mean is that there is nothing difficult nowadays. (Teacher 5)

Likewise, Teacher 3 agreed that the teachers' job is to look for an opportunity for an improvement:

If the teacher really wants to improve, if she is passionate about her work, she will improve herself. Whether she uses the opportunities that the ministry offers or even outside these opportunities. I mean she can read recent research. Look, I aspire to get my master's degree, and every time I apply, it just did not happen. But I didn't stop, I mean, I took courses and really benefited from them. I mean, the teacher is responsible for improving themselves. (Teacher 3)

4.7 Theme 5: Changes That Are Needed in the Saudi Educational System

During interviews, the participants spoke frequently about the changes they believe are needed in the Saudi education system, which they described as improvements that teachers hope to see or practice in their future careers. These ideas were expressed across a broad range of areas from improving pedagogy frameworks for teaching students with disabilities in an inclusive environment to improved attitudes, responsibility, and engagement of teachers with their students. Intertwined with these

views about the need for changes was a common theme among the participants that, as teachers, they aim for the best outcomes for their students. This dedication to their teaching was evident in many responses when participants were asked what changes would they like to see.

For example, Teacher 1 was hoping that the other teachers could become more flexible and accommodating with the students and more tolerant within the education system in general. He gave an example of the responsive approach he practices, and expressed the hope he could influence the professional practice of other teachers to respond in an inclusive manner to students with disabilities in their classrooms:

I always say that the student [with disability] comes to your class as if he is a guest, and he stays in your hospitality. Because when the teacher has the idea that he's a host, he won't blame anyone else. Some teachers are just blaming the principal, blaming the class, blaming the students, or blaming the budget. They complain that the school has no [special education] aids and no this and no that. He [the teacher] needs to adapt to the idea of being the host. The host does not blame anyone, because the people are coming to his place, so he must honor them with the unlimited generosity and give them whatever he has to please them. (Teacher 1)

This perspective expressed by Teacher 1 has strong underpinning foundations in Saudi and Arab traditional culture and Islamic religious values and norms where the host is obligated to provide hospitality to anyone who enters their house as a guest. Verses from the *Holy Quran* and sayings from the Hadith refer to the centrality of this Islamic duty to be a generous host: "He who believes in Allah, should honor his guest" (Sobh et al., 2013, p. 5), such that guests are fed and housed without question. Thus, what Teacher 1 suggests is in reference to long-established cultural norms and expectations

of the host-guest interface in Arab tradition that dictates generosity and openness toward guests.

Teacher 2 talked about the need for closer working relationships and communication between the IEP teams and the teachers, the families and the teachers, and the health providers and the teachers. He thinks that will improve the student outcomes, particularly for those with learning difficulties, and enable the teachers to provide the best teaching practices that fit the students' needs:

I spoke with the head of the Department of Special Education and told him I wish that the whole file [on students with learning difficulties] would be transmitted, including the diagnosis of the psychologist, the diagnosis of the audiologist, the audiogram, the diagnosis of the speech pathologist, all of these should be transferred to the file. I usually receive incomplete files, even if the audiogram is not there. I also, on top of that, have a second wish that there should be educating sessions for parents and that there should be audiograms every year in cooperation with a hospital. I spoke to someone in a hospital, and I said to him, I wish you would just provide us with a special support center, a number that we, as teachers, can reach when we need help. Anyone from the special education category should contact this number and set an appointment, and they can take care of everything for the special needs student. (Teacher 2)

Teacher 3, Teacher 4, and Teacher 5 expressed similar hopes for the changes they want to see. They agreed on the importance of having a framework, such as UDL, that can help the teachers to use the curriculum in more flexible ways. As Teacher 3 was hoping for the curriculums to be more flexible, she believed that UDL could be the salvation for the students with mild disabilities who attend inclusion classrooms:

Sometimes, I participate with the teachers in their classroom in a co-teaching lesson, and I try as much as I can to work with the students, but the curriculum does not really help in some cases. Thus, implementing UDL surely would have a positive impact on everyone, not just students with disabilities. (Teacher 3)

Teacher 4 agreed with that view, and she added:

I feel that if the UDL steps took place, it would be a very beautiful thing for our students. This way students with special needs will be included into society in a beautiful way. I feel that if individual education is applied to general teaching, it will give good results, because we will follow essential steps that will work with all the students. (Teacher 4)

Teacher 5 thought the main point that she found most effective about implementing UDL is the flexibility:

There must be some flexibility in a teacher's instructional choices. I always demand that the teacher have a choice, so she can decide to read a story, or sometimes give a reading lesson. I always watch foreign classes [on the Internet] and observe how they deliver the information through playing. Through discussions, through strategies, they go to school, and they have the freedom of choice. But here, no, we are restricted by specific periods, I have a curriculum that I have to finish on time, and I am also restricted by systems and skills that the student [even students with special needs] must master in the Noor System. We still have this restriction. If you ever come up with an idea and want to implement it, you have to implement it as a whole, you can not apply half of it and leave the rest, not based on my opinion. It is really hard. (Teacher 5)

Overall, teachers agreed on the great improvement that the implementation of Saudi Vision 2030 is achieving in the field of education in general and the special education in particular. They said they are informed about many education programs that are under review and continual improvement. They also mentioned the teacher qualification programs that the Saudi universities are providing and the beneficial impact of that development to the field of special education, as more pre-service teachers gain specialist qualifications and skills needed to facilitate and practice inclusive education.

Summary of the Key Qualitative Findings

This part has presented the qualitative data from this mixed-method study that was collected from interviews. Special education teachers shared their points of view and experiences regarding their teaching practices in inclusive classrooms. The teachers described some of the challenges they face when teaching their inclusive classrooms where students have a range of different needs and capabilities. They raised concerns about the current inflexibility of the curriculum and assessment methods for students with disabilities. Thus, they consistently pointed to the need for a framework to guide their inclusive teaching practice. When the teachers were introduced to the UDL principles through the survey questions or during the interviews, they observed that the UDL approach aligned well with their own pedagogical beliefs and practices, in so far as they were able to apply them. Moreover, teachers concurred with the effectiveness of UDL approaches to teaching in inclusive classrooms and suggested improvements to the educational system in Saudi Arabia would be possible if UDL principles were implemented.

CHAPTER 5: DISCUSSION AND CONCLUSION

Overview of the study

This study sought to investigate the teaching practices using universal design for learning principles in special education classrooms in Saudi Arabia. Using a mixed method approach, data was collected via interviews and surveys to determine the beliefs about current practices that the sampled teachers apply in their classrooms, the challenges that face them, and to find the connect between the teachers' practices to an official framework (Universal Design for Learning- UDL). The study examined the teachers' beliefs about their practices against the principles of Universal Design for Learning. The study aimed to inform a guide for special education teachers to follow based on the UDL framework. The study is expected to inform, benefit, and contribute to the Saudi government's efforts to reform and improve inclusive teaching approaches in the education system in line with the 2030 vision of the government.

The study found that teachers of inclusive classrooms in Saudi Arabia are implementing a variety of teaching practices to meet the diverse needs of their students. Despite the fact that teachers are facing challenges both inside their classrooms and outside, their beliefs about teaching, and their descriptions of their own teaching strategies, were congruent with UDL's recommendations for best practices for their students. In addition, the study found that the teaching practices of teachers of inclusive classes in Saudi Arabia are aligned with UDL principles. This finding can be supportive of the goal of the study, which is to provide an official framework to support teaching practices in inclusive classrooms in Saudi Arabia.

This chapter presents finding for the study and answers the research questions. It also represents the conclusion of the study and underlines the main points to consider for future research.

Research Questions

In this study, the focus was on the following central questions:

- Question 1: *To what extent do Saudi teachers perceive the importance/effectiveness of UDL practices?*
- Question 2: *What are the Saudi teachers' understanding of some of the challenges that relate to UDL?*
- Question 3: *Is there any connection between the teaching method and practice in inclusive classrooms in Saudi Arabia and the principles of UDL?*

An analysis of the findings based on the research questions is presented as following:

Question 1 To what extent do teachers perceive the importance/effectiveness of UDL practices?

From both quantitative and qualitative data, the teachers presented a variety of beliefs toward teaching practices they implement in their inclusive classrooms. They mostly adapted their teaching practice based on the needs of their students who have different abilities and ways of learning. Teachers expounded more in-depth in the interview when they explained their efforts in preparing lessons by adapting teaching practices that may or may not work with their students since they do not have basic formwork to follow. It was clear from the data that teachers of inclusive classes depend on their own experiences and background knowledge. They may have support from the school principal or their colleagues. However, no official support regarding their teaching practices is available. They agreed to the need for a framework that may support them and provide a foundation to direct them in their practice. Indeed, teachers in the survey showed their opinions by heavily supporting the inclusion of students with mild disabilities and extending the need to have an appropriate curriculum that meets the needs of all students. Even though the idea of having students with mild disabilities

in general education classrooms has been successfully promoted and has shown a great impact for both students with disabilities and students in general education, inclusive practices need to be upgraded once it comes to the curriculum.

The data shows a need for a curriculum that is designed for the inclusive classroom. The general education curriculum is designed for students in general educational settings and therefore often does not fit the needs of students with mild and moderate disabilities. Even with the efforts the teachers are providing to adjust their teaching practices to involve all the students within the existing curriculum, adjustments need to be redesigned to serve all students in inclusive classrooms. Sending the students into a resource room to get support with their areas of need such as math, reading or writing does not mean they have a curriculum that is assigned for them. Instead, this practice excludes them from full engagement in general classrooms and does not provide extra help which might not solve the prevalent problem.

This finding matches the point of previous studies discussed in the literature review of this study. The literature makes the argument in favor of the inclusion of students with mild disabilities in general classrooms. For example, Edyburn, (2010) and Rose, (2001) suggested that, even though having physical inclusion is a great step for increasing the diversity of students in a classroom and has, therefore, benefited all the students, it does not guarantee the full inclusion of students with disabilities when they are disconnected from the curriculum.

The concept of UDL was inspired by the field of architecture. In the 1980s, architects developed the idea of designing buildings with people's abilities and disabilities in mind. The idea of Universal Design (UD) was reflected in buildings that were universally designed (e.g., providing ramps, elevators, or automatic doors) to make them accessible for people with disabilities (Almumen, 2020; Griful-Freixenet et

al., 2020). Not long after UD started to be widely utilized for building design, ideas about designing school curricula that were more uniformly accessible and equitable for students with disabilities were also gaining support. The governments and schools in the United States (US) were at the forefront of these developments. There then followed key legislation enacted to empower the ideas about enabling children with disabilities to gain access to education Public Law (P.L.) 94-142, the Education for All Handicapped Children Act (1975) was established to provide public education for all children, regardless of their ability. Among other changes were brought about by the reauthorization of the law in 1990 the renaming of P.L. 94-142 into the Individuals with Disabilities Education Act (IDEA). This was followed by subsequent reauthorization of the Individuals with Disabilities Education Act (IDEA) in 1997 and 2004. . These changes in the law lead to improvement of the practices for students with disabilities and have a great impact on the implementation of UDL.

Considering the history behind the development of UDL over the years in other countries it is clear that the Saudi Arabian educational system is going on the right track in the implementation of inclusion starting with the physical space. However, the underlying question for the Ministry of Education in Saudi Arabia is, why should the implementation of any framework have to be a start-over while there is an existing version of it already.

In addition to the successful reforms that come from within the education ministry, pressure from outside the country influences reform efforts. Saudi Arabian educational policy needs to take advantage of and benefit from global developments. An essential component of these reforms should include observing and analyzing some of the educational systems in developing countries and subsequently adjusting them to fit with the values of Islamic norms, culture, and philosophy (al-Essa, 2009).

Question 2: What are the teachers' points of view on some of the challenges that relate to inclusive classrooms?

Special education teachers who participated in the study are in great support of the inclusion classrooms as they observe the advantages of it. It is found from the data that the item "the inclusion of special education classes within public schools is important to help develop awareness of others" achieved a very strongly agree response score from the point of view of special education teachers. This item was followed by item (8) of the survey, which states "the inclusion of students with moderate and mild disabilities into the classroom helps students of general classes to communicate with their friends with special needs". Data from the interviews strongly support this point of view and emphasize the importance of including students with disabilities with their peers in the same classroom. The teachers in the interviews agreed with the teachers from the survey about the improvement of academic performance and life skills for all the students when inclusion is practiced.

Despite the fact that they found the inclusion classes the perfect way of teaching students with mild disabilities, they reclaim some of the challenges they face in their inclusive classes. Those challenges are being explained in depth in the previous chapter, and the following are the two main sections that can underline that:

challenges that occur during the lesson that teachers point out were the struggling to find the best practices they could use to help them plan their lessons based on the curriculum. even though they mostly agreed with the item "curricula are only one of several factors affecting the success of the educational process". They, on the other hand, think it is very important to have a flexible curriculum that meets the needs of all students. The teachers pointed out that, "the current curricula must be modified to suit the needs of all students". In

addition, they also reported struggling to assist students with mild disabilities when it comes to assessment. The curriculum is designed to be for the average level of students in general classes as well as the assessment of students' progress. Thus, teachers are stuck between meeting the curriculum standards and assessing the kids on their own level.

Looking at the philosophy behind UDL, the attempt to improve the educational process for all students by introducing more flexible methods of teaching, assessing and general service provision to meet the needs of diverse learners in classrooms (Kelly, et al. 2022) is critical. UDL can be a solution to the challenges that teachers face in their classrooms. It is time and effort-consuming for teachers to reframe the curriculum to fit all the students' needs. Teachers mostly disagree with providing the general educational curriculum in the inclusive classes or assessing students with special needs with the same assessment as their peers in the general classrooms. However, they express difficulties in changing the current situation which are related to time, effort, and support from the relevant parties. Ministry of Education, school principals, and families can play main roles in driving the changes that are needed to reframe the current curricula to fit the needs of different students. The main work can be done with the Ministry of Education by opening a channel between the teachers and the decision-makers to rethink the current curricula and then reframe them. Then the adoption of the new changes with support from school principals and families of students with disabilities. As a result, teachers will be able to work side by side with the other parties to meet the students' needs.

Another type of challenge that is reported by the teachers in the study is related to the disconnect between the teachers and other parties. Teachers in the study find

family engagement meaningful in their classes and this impacts the student's performance in many ways. They view education as a cycle that should be moving between the teachers and the families and if they do not keep the rhythm of the movement, the cycle will stop. The positive connection between family involvement and students' academic achievement and other, behavioral and social outcomes was found over the past four decades throughout multiple studies (Epstein, 1987; Wilder, 2014). Basham, et al (2010) discuss the positive impact of collaboration between schools and families. They; however, argue that there is no direct connection between family involvement and the implementation of UDL. However, Crecelius & Neild, (2022) responded to this argument by providing evidence of the application of the UDL Approach toward Families Engagement, According to CAST (2018). They suggest the following framework for working with families and UDL:

Engaging Families: Knowing the family and engaging them is a key element to getting to know the students as individuals and as part of their collective group (their family) Doing this can set up a strong foundation for academic growth and social and emotional stability. This can be done by providing multiple means of engagement through communication platforms that are accessible to the family and meet their needs.

Representation for Families: Representation for the family can create positive home-school relationships to foster academic improvement for students with disabilities. Teachers can discover appropriate representation for the families by actively listening to what parents or families are interested in knowing about a student's school life which may include non-academic related aspects.

Action & Expression of Families: Building school-family communities, including social media platforms, allows families to participate with peers in decisions, planning,

communication, information-sharing, and cultural and social support, all of which are linked to a positive school environment. Families can be a part of educational practice by inviting them to participate in school conversations through board meetings, family conferences, and school events.

Families, school principals, and other service providers should be working to collaborate in support of the students' success. Having a framework that connects all these parties and draws the line for each one's responsibilities is a way to proceed. As a result, there will not be conflict related to who does what or centered the whole responsibilities to the teachers. Instead, it will be all stander-based, and the process of changing and improving is among the load of all.

Question 3: Is there any connection between the teaching method and practice in inclusive classrooms in Saudi Arabia and the principles of UDL?

As illustrated from the data analysis in the previous chapter, teachers have some knowledge about the concept of UDL and they implement most of UDL principles in their teaching. Despite the fact that they did not state they actually implement the principles of UDL, many described the UDL-related practices they are incorporating in their classrooms. In the following paragraph, an overview of the principles of UDL and the related practices that teachers adopt in the inclusion classes is reviewed.

According to the CAST (2011), the UDL instructional framework includes three primary principles that work as a guideline for implementation:

1. The first principle is representation, which involves multiple content, such as visual, graphical, and auditory material (Meo, 2008; Zhong, 2012). The representation principle addresses the “what” of learning based on the brain’s recognition network (Griful-Freixenet et al., 2020).

This principle of UDL is found to be the most relevant in the teaching practices that special education teachers follow in Saudi Arabia. Teachers were able to pinpoint many teaching practices they follow that are in line with UDL. They start preparing their lessons by knowing their students and their strengths and weaknesses, and from there they plan their lessons and activities based on their students' needs. The teachers were able to identify many practices they used that are related to UDL such as using a variety of technology options, , mixing the level of activities based on the student levels in the class, representing the information multiple times with different teaching methods and reviewing the previous lesson to make sure students are ready for the new one.

2. The second principle is action and expression, which means providing multiple opportunities for students to present what they have learned (Meo, 2008; Zhong, 2012). The action and expression principle addresses the “how” of learning based on the brain’s strategic networks (Griful-Freixenet et al., 2020).

Teachers were following this Principle of UDL as they reported were providing an evaluation for their students to see the best teaching practices that fit their needs. They also reported trying to assess their students with multiple activities that help them to make appropriate generalizations of what they have learned. Indeed, teachers emphasized the importance of having activities that are fun and attractive for their students to get them to learn in a supportive atmosphere.

3. The third principle is engagement, which means providing different ways for students to be involved in learning (Meo, 2008; Zhong, 2012). The engagement principle addresses the “why” of learning based on the brain’s affective networks (Griful-Freixenet et al., 2020).

An example of the implementation of this principle was displayed by teacher 3, who involved different activity levels that targeted the variety of the students' needs. She put an emphasis on providing an effective teaching environment that helps all students to get engaged with the lessons. Teachers were caring about students' growth, and slow but steady learning was one of the most common criteria that teachers agreed on. Therefore, they were looking at the students as a whole piece and then dividing their abilities based on their strengths and weaknesses. They designed the teaching practices based on the student's strengths to take advantage of them. In the meantime, they were working on assisting the students' weaknesses. They were able to identify teaching practices and evaluation activities that target the development of each student based on their needs.

Conclusion

Under the umbrella of the reform of the educational system and the significant improvement that Saudi Arabia is seeking through the 2030 vision, the findings of this study can be understood. The study provides data supportive of the vision and suggests a framework that can help improve the teaching practices in inclusion classes. The study aimed to highlight the current practices that special education teachers implement in their inclusion classrooms and illustrate the challenges they face. Accordingly, the study suggests some solutions to some of the challenges teachers face when they teach in inclusion classrooms. Based on the teachers' practices, which the study found to be in agreement with UDL principles, and the challenge of teaching in inclusive classrooms, the suggestion of adapting UDL in the Saudi educational system was found to be a good fit solution.

The study was a success in meeting its aims. The teachers described many practices they use that meet the principles of UDL even if they do not use the term. As

they were leaning on their own knowledge and personal effort to select the best teaching practices for their students, they were also looking for an official framework that supported their philosophy of teaching. The connecting of the philosophies and the matching of the concept between the 2030 vision and the UDL is also an element that indicates the potential effectiveness of UDL in the Saudi educational system.

The main two factors the study suggested to start with when adapting UDL to reframe the educational system in Saudi Arabia are curriculum adjustment and teachers' improvement. It will be important to point out the work that has been accomplished in other countries.

According to the 2004 IDEA, the Higher Education Opportunity Act (2008), and National Education for Technology Plan (2016), the United States (U.S.) Department of Education identified UDL as “a scientifically based educational framework that supports the variability of students’ instructional needs”. The Every Student Succeeds Act (ESSA, 2015) and the more recent reauthorizations of the Individuals with Disabilities Education Act (IDEA, 2004) identified UDL as a foundational framework to support educating all learners. In its approach, UDL requires more human-centered, long-range thinking; it is a way of designing the curriculum with attention to the flexibility of instructional goals, methods, materials, and assessments that accommodate learner differences (Meo, 2008; Zhong, 2012).

Alharbi & Alshammari, (2020) in their review of the 2030 vision highlight the important role of the improvement of the curriculum as part of the vision, and they emphasize the linking between the curriculum and society. They indeed, explain that the curriculum should include a reflection of socially acceptable norms and values. It is then a way of reflecting fairness, sensitivity to individuals’ needs, and respect for all students. The goal of UDL, according to CAST (2011, 2018), is to develop teaching

methods that enable educational achievement for all students with diverse learning needs, including those with disabilities and cultural differences, to have equal access to the classroom curriculum. This describes the major value that UDL represents, which is equity and inclusion.

Progressivism, reconstructionism, cognitive development, and academic rationalism should be among the curriculum orientations and foundations included in curriculum intentions. These core curriculum intentions will provide an explicit demonstration of a nation committed, through educational processes, to cultivating, and potentially reconstructing its future citizens and society that is academically oriented and prepared; possessing the critical thinking skills that will shape the future of the Saudi Arabia in its drive to move towards a knowledge-based economy. (Mitchell & Alfuraih 2018).

The concept of UDL views the equity of learning opportunities as a core of the learning mission and something that should be considered when creating the environment in the classroom and designing the curriculum (Pace & Schwartz, 2008). Thus, UDL comes from the idea of respecting diversity, which has today become essential practice in many schools. Classrooms may include students with different abilities, backgrounds, experiences, and preferences (Zhong, 2012). Therefore, the learning environment and teachers' practices should acknowledge and appreciate students' diversity in order to support learning for all students.

The principles of UDL align with modern pedagogical theories, which emphasize the importance of equity in the curriculum for all students. This equity does not mean that the curriculum presents no academic challenges for students. Instead, it provides a scientifically based educational framework that serves a wide range of best practices, with an emphasis on the role of the teacher, who can use these principles to

facilitate learning for all students in the class (Izzo & Murray, 2003).Based on the study conducted by Asiri, (2020) on teachers' concern and professional development needs in adopting inclusive education in Saudi Arabia, teachers need immediate training in inclusive education curriculum, professional assistance to support their teaching, and seminars/workshops on inclusive education.Expand here. Do you agree with his suggestion? If so state that!

Previous studies in the field of education found that teachers have the main effect on the students' learning, even more than the school effect (Lowrey, et al. 2019). The Organization for Economic Cooperation and Development (2005) has found the most important variable affecting student achievement is teacher quality. A critical element of any school system, therefore, is the “capacity to nurture and develop teachers who have the understandings, skills, critical sensibilities, and contextual awareness to provide quality educational access, participation, and outcomes for all students” (Waitoller & Artiles, 2013, p. 320). The UDL framework is directly tied to effective curriculum design and instruction, appropriate for all content areas, and leads to improved outcomes for all students (Center for Applied Special Technology [CAST], 2011). Preparing training programs for teachers to implement the UDL framework promotes access to and progress in the general education curriculum. As a result, promises of more effective practices trained teachers implement, will likely improve outcomes for future students (Lowrey, et al. 2019).

The Ministry of Education identified 36 initiatives to be implemented, which aim to contribute significantly to Vision 2030(see Appendix C). A number of those initiatives are related to teachers' improvement and development. For example, item 1: a comprehensive framework for continuing professional development for teachers and educational leaders and item 9: develop a national strategy to upgrade the teaching

profession by raising the professional level of teachers, improving the profession's ecosystem, and raising the quality of services provided to teachers both focus on teachers.

In conclusion, the education system in Saudi Arabia is very promising. All the recommended education practices are leaning toward the improvement of inclusion. The implementation of UDL will support the teachers' development and increase the creativity of the teachers. Teachers will then have an official framework they can rely on when preparing their teaching practices. Taking advantage of other countries' educational practices is in line with the 2030 Saudi vision and will, therefore, help speed the improvements.

Limitations of the study:

As with the majority of studies, this study has potential limitations that can be discussed as follows:

A lack of previous research studies:

- The topic has not been fully explored previously. During my literature review, I cited and referenced previous research studies, which provide the theoretical foundations for the research questions I am addressing. Due to the narrow scope of my research topic, I was limited in the number of prior research studies that are relevant to UDL in Middle Eastern countries. The topic of UDL has not been studied in the Arabic literature yet; thus, it was almost impossible to point to any local examples or refer to UDL as a culturally appropriate context.
- At the time of the research, the educational part of the 2030 vision was not officially published. Even though the general guidelines were clear, the specific practices had not been identified. Thus, there were limitations on

the research describing specific teaching practices that may or may not meet the goal of the current research.

Culture-based conflicts and personal issues:

The main limitation in this regard relates to language differentiation. The research language is English while the data was collected in Arabic. This point created some difficulties that affected the research timeline and doubled the effort of analyzing the data and summarizing the findings. In addition, while the participants were able to have a summary of the research in Arabic the research needed to be translated into Arabic to allow the participants to read it all. Some subtle meanings of various terms were inevitable lost in the process. Researcher biases are inevitable and likely to have influenced the findings. Even though I tried to hide my personal thoughts and beliefs throughout the research, it was clear that I have great empathy toward students with disabilities. I stand with their right to be included in the general classes and their right to receive equal attention and support during the lessons. I agree with their right to be provided with the appropriate curriculum that can meet their differing needs. I was not presenting my beliefs directly; however, I found the spirit of my thought between the lines throughout the research.

Limited access to data

- Issues with research samples and selection appear in this study. To ensure that the sample is considered representative of a population and that the statistical result can be generalized to a larger population. statistical tests require a larger sample size. In this study, the initial estimation of the survey participants was meant to be between 200 and 250. However, there was a limitation in gaining this number of participants. Even though the participants can be representatives

of different Saudi areas, and the survey had motivational phrases that are culture-recommended, the data collection process did not receive the estimated number. There is a need to support researchers by participating in surveys and encouraging society to adapt to the culture of participating by presenting the advantages of research to the whole society.

- Limitations in issues related to COVID-19 were also faced during the study. The restricted school rules of having online classes, and not allowing visitors from outside of the school to access the school prevented me from being able to visit the teachers in their classes and have the interviews in their place of work. Also, I made the process of the interviews a little complicated as all the interaction was online, which prevented direct conversations and took a longer time frame.

Future research needed to address the research problem.

My future research plan is to reframe the UDL principles to meet the educational realm of Saudi Arabia. I will then present the framework to the Ministry of Education to conduct research that studies the impact of the UDL framework in the educational system of Saudi Arabia. There is also a need to address the effects of UDL principles on teachers' preparation of the lessons. As the teachers are the main element that can impact the success of any framework, their thoughts, hopes and concerns should be identified and resolved to make the best of any new framework.

There is also a need to support the teachers in finding the best practices that can help them manage their classrooms. When there is very little or no prior research on a specific topic in specific areas, we may need to develop an entirely new research typology (Sundqvist: Ström. 2015). In this case,

discovering an existing framework can be considered an important opportunity to identify literature gaps and to present the need for further development in the area of study. A suggested culturally appropriate framework of UDL is a goal for future research.

REFERENCES

- Al-Atwaneh, M. (2009). Is Saudi Arabia a theocracy? Religion and governance in contemporary Saudi Arabia. *Middle Eastern Studies*, 45(50), 721-737. DOI: 10.1080/00263200802586105
- Al-Azawei, A., Serenelli, F., & Lundqvist, K. (2016). Universal design for learning (UDL): A content analysis of peer-reviewed journal papers from 2012 to 2015. *Journal of the Scholarship of Teaching and Learning*, 16(3), 39-56.
- Aldabas, R. (2015) Special Education in Saudi Arabia: History and Areas for Reform. *CreativeEducation*, 6, 1158-1167. doi: [10.4236/ce.2015.611114](https://doi.org/10.4236/ce.2015.611114).
- Almumen, H. A. (2020). Universal design for learning (UDL) across cultures: The application of UDL in Kuwaiti inclusive classrooms. *SAGE Open*, 10(4), 2158244020969674
- Alquraini, T. (2010). Special education in Saudi Arabia: Challenges, perspectives, futurepossibilities. *International Journal of Special Education*, 25(3), 139-147.
- Al-Sartawi, Z., & Abunyan, I. (1998). *Resources Rooms-Teachers' guide in special education*(Translated). King Saud University, Saudi Arabia.
- Alharbi, H., & Alshammari, M. (2020). Advocacy for Democracy in the Education System as a Part of the Saudi Arabia's Vision 2030. *Journal of Higher Education Theory and Practice*, 20(8), 129-134.
- Asiri, A. A. (2020). Teachers' Concern and Professional Development Needs in Adopting Inclusive Education in Saudi Arabia, Based on Their Gender foVision 2030. *Journal of Education and Learning*, 9(6), 9-20.
- Basham, J. D., Gardner, J. E., & Smith, S. J. (2020). Measuring the implementation of UDL in classrooms and schools: Initial field test results. *Remedial and Special Education*, 41(4), 231-243.
- Basham, J. D., Israel, M., Graden, J., Poth, R., & Winston, M. (2010). Acomprehensive

approach to RTI: Embedding universal design for learning and technology.
Learning Disability Quarterly, 33(4), 243-255.

Baskarada, S. (2014). Qualitative case study guidelines. *Başkarada, S.(2014).*

Qualitative case studies guidelines. The Qualitative Report, 19(40), 1-25.

Beg, S., Fitzpatrick, A., & Lucas, A. M. (2021, May). Gender bias in assessments of
teacher performance. In *AEA Papers and Proceedings* (Vol. 111, pp. 190-95).

Boone, H. N., & Boone, D. A. (2012). Analyzing likert data. *Journal of extension*,
50(2), 1-5. Bott, J. P. (2007). Case Study Method. In *Encyclopedia of industrial
and organizational psychology* (Vol. 1, p. 68). Sage Publications, Inc.

Brick, J. & Kalton, G. (1996). Handling missing data in survey research. *Statistical
Methods in Medical Research*. 5. 215-38. 10.1177/096228029600500302.

Bullough R. V., Jr. (2015). Differences? Similarities? Male teacher, female teacher: An
instrumental case study of teaching in a Head Start classroom. *Teaching and
Teacher Education*, 47, 13-21.

Center for Applied Special Technology (CAST). (2011). *Universal design for learning
guidelines version 2.0*.

Center for Applied Special Technology (CAST). (2018). *Universal design for learning
guidelines* (Version 2.2). <http://udlguidelines.cast.org>

Comparative Constitutions Project. (2021). *Saudi Arabia's Constitution of 1992
with Amendments through 2005*.

https://www.constituteproject.org/constitution/Saudi_Arabia_2005.pdf

Courey, S. J., Tappe, P., Siker, J., & LePage, P. (2012). Improved Lesson Planning with
Universal Design for Learning (UDL). *Teacher Education and Special
Education: The Journal of the Teacher Education Division of the Council for
Exceptional Children*. doi:10.1177/0888406412446178

Coyne, P., Evans, M., & Karger, J. (2017). Use of a UDL literacy environment by
middle school students with intellectual and developmental disabilities.
Intellectual and Developmental Disabilities, 55(1), 4-14.

<https://doi.org/10.1352/1934-9556-55.1.4>

Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating
quantitative and qualitative research* (2nd ed.). Pearson

- Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research* (3rd ed.). Merrill/ Pearson Education.
- Crececius, A., & Neild, R. (2022). Special Education: Inclusive Pedagogy & Online Learning UDL Strategies for Inequities Beyond Emergency Remote Learning: A Family Focus. *Thresholds in Education*, 45(1).
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Handbook of Qualitative Research* (pp. 1-32). Sage Publications.
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314-321.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail and mixed-mode surveys: The tailored design method*. Wiley.
- Dimitrov, D., & Alsadaawi, A. (2018). Latent Profiles of Performance on Certification Testing: The Case of Special Education Teachers in Saudi Arabia. *Universal Journal of Educational Research*. 6. 2029-2035. 10.13189/ujer.2018.060922
- Education for All Handicapped Children Act. (1975). Public Law (PL) 94-142).
- Edyburn, D. L. (2010). Would you recognize universal design for learning if you saw it? Ten propositions for new directions for the second decade of UDL. *Learning Disability Quarterly*, 33(1), 33–41.
- Epstein, J. L. (1987). Parental involvement: What research says to administrators. *Education & Urban Society*, 19(2), 119–136.
- Edyburn, D.L., & Gardner, J. E. (2009). *Readings in special education technology: Universal design for learning*. Council for Exceptional Children.
- Evans, J., & Lunt, I. (2002). Inclusive education: Are there limits? *European Journal of Special Needs Education*, 17(1), 1–14.

- Fàbregues, S., Molina-Azorin, J. F., & Fetters, M. D. (2021). Virtual special issue on quality in mixed methods research". *Quality in Mixed Methods Research, 15*(2).
- Frandell, A., Feeney, M. K., Johnson, T. P., Welch, E. W., Michalegko, L., & Jung, H. (2021). The effects of electronic alert letters for internet surveys of academic scientists. *Scientometrics, 1-15*.
- (EduWave EMIS®) implemented through Integrated Technology Group (ITG) which is used in the public and private schools of the country (ITG, 2018).
- Gage, N. A., Lierheimer, K. S., & Goran, L. G. (2012). Characteristics of students with high-incidence disabilities broadly defined. *Journal of Disability Policy Studies, 23*(3), 168-178.
- Garman, N. (1996). Qualitative inquiry: Meaning and menace for educational researchers. *NOTE 363p.*; *Produced by the University of South Australia, Centre for Research in Education, Equity and Work. Grant towards production provided by Texts in Humanities, School of Education, University of South Australia. Papers from, 18.*
- Gay, L.R., Mills, G.E., & Airasian, P. (2012). Educational research competencies for analysis and applications. New York, NY:Pearson.
- Gegenfurtner, A., Zitt, A., & Ebner, C. (2020). Evaluating webinar-based training: a mixedmethods study of trainee reactions toward digital web conferencing. *International Journal of Training and Development, 24*(1), 5-21.
- Goddard, C., & Evans, D. (2018). Primary pre-service teachers' attitudes toward inclusion across the training years. *Australian Journal of Teacher Education, 43*(6), 121–142.
- Goertzen, M. J. (2017). Introduction to quantitative research and data. *Library TechnologyReports, 53*(4), 12-18.

- Gouda, M., & Potrafke, N (2016). Gender equality in Muslim-majority countries. *Economic Systems*, 40, 683698. <https://doi.org/10.1016/j.ecosys.2016.04.002>
- Griful-Freixenet, J., Struyven, K., Vantieghem, W., & Gheysens, E. (2020). Exploring the interrelationship between universal design for learning (UDL) and differentiated instruction (DI): A systematic review. *Educational Research Review*, 29, 100306.
- Guetterman, T. C., Molina-Azorin, J. F., & Fetters, M. D. (2020). Virtual Special Issue on “Integration in Mixed Methods Research”.
- Hall, T. E., Cohen, N., Vue, G., & Ganley, P. (2015). Addressing learning disabilities with UDL and technology: Strategic reader. *Learning Disability Quarterly*, 38(2), 72–83.
- Hayes A. M. & Bulat J. (2017). *Disabilities Inclusive Education Systems and Policies Guide for Low- and Middle-Income Countries*. Research Triangle Park, RTI Press. doi:10.3768/rtipress.2017.op.0043.1707
- Heigham, J., & Croker, R. (Eds.). (2009). *Qualitative research in applied linguistics: A practical introduction*. Springer
- Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Volume 9 Issue 1 (fall 1997)*.
- Individuals With Disabilities Education Act. (1997). Pub. L. No. 105-17.
- Ivankova, N. V., & Creswell, J. W. (2009). Mixed methods. *Qualitative research in applied linguistics: A practical introduction*, 23, 135-161.
- Izzo, M. V., & Murray, A. (2003). Applying universal design for learning principles to enhance achievement of college students. In S. Acker & C. Gynn (Eds.), *Learning objects: Context and connections* (pp. 29–42). Ohio State University. http://telr-research.osu.edu/learning_objects/index.html

- Izzo, M. V., Murray, A., & Novak, J. (2008). The faculty perspective on universal design for learning. *Journal of Postsecondary Education and Disability*, 21(2), 60–72.
- Kelly, O., Buckley, K., Lieberman, L. J., & Arndt, K. (2022). Universal Design for Learning-A framework for inclusion in Outdoor Learning. *Journal of Outdoor and Environmental Education*, 25(1), 75-89.
- Lowrey, K. A., Hollingshead, A., Howery, K., & Bishop, J. B. (2017). More than one way: Stories of UDL and inclusive classrooms. *Research and Practice for Persons with Severe Disabilities*, 42(4), 225–242.
- Lowrey, K. A., Classen, A., & Sylvest, A. (2019). Exploring ways to support preservice teachers' use of UDL in planning and instruction. *Journal of Educational Research & Practice*, 9(1), 261.
- Lundqvist, J., & Larsdotter Bodin, U. (2018). Inclusive Classroom Profile and Early Childhood Inclusion in a Swedish Preschool Context. In *ICPQIE, Intergenerational and comparative perspectives on quality inclusive education*, Department of Special Education, Stockholm University.
- Maash, W. (2021). An Overview of Teacher Education and the Teaching Profession in Saudi Arabia: Private vs. Public Sector. *International Journal for Cross-Disciplinary Subjects in Education*, 12(1). <http://hdl.handle.net/10871/125224>
- Mangiatordi, A., & Serenelli, F. (2013). Universal design for learning: A meta-analytic review of 80 abstracts from peer reviewed journals. *Research on Education and Media*, 5(1), 109–118.
- Mavrou, K., & Symeonidou, S. (2014). Employing the principles of universal design for learning to deconstruct the Greek-Cypriot new national curriculum. *International Journal of Inclusive Education*, 18(9), 918–933.
doi:10.1080/13603116.2013.859308

- Meo, G. (2008). Curriculum planning for all learners: Applying universal design for learning (UDL) to a high school reading comprehension program. *Preventing School Failure: Alternative Education for Children and Youth*, 52(2), 21–30.
- Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education*. San Francisco: Jossey-Bass.
- Meyer, A., Rose, D. H., & Gordon, D. T. (2014). *Universal design for learning: Theory and practice*. CAST Professional.
- Ministry of Education. (2002). *Document of Rules and Regulations for Special Education Institutes and Programs*. Riyadh, Saudi Arabia, General Secretariat for Special Education.
- Ministry of Education. (2020). Objectives 2020
<https://www.moe.gov.sa/ar/PublicEducation/ResidentsAndVisitors/Pages/TooAndAimsOfEducation.aspx>
- Ministry of Education. (2021). *The general framework for developing teacher preparation programs in Saudi universities* [Translated from Arabic]. Riyadh.
- Mitchell, B., & Alfuraih, A. (2018). The Kingdom of Saudi Arabia: Achieving the aspirations of the National Transformation Program 2020 and Saudi vision 2030 through education. *Journal of Education and Development*, 2(3), 36.
- Mohammed, A. (2018). Twice-Exceptionality in the Kingdom of Saudi Arabia: Policy Recommendations for Advances in Special Education. *International Journal of Special Education*, 33(2), 397-415.
- Mulhall, A. (2003). In the field: notes on observation in qualitative research. *Journal of advanced nursing*, 41(3), 306-313.
- Murry, F. R., & Alqahtani, R. M. A. (2015). Teaching special education law in Saudi Arabia: Improving pre-service teacher education and services to students with disabilities. *World Journal of Education*, 5(6), 57-64.

Murwaski, W. W., & Swanson, H. L. (2001). A meta-analysis of co-teaching research: Where are the data? *Remedial and Special Education*, 22(5), 258–267.

National Center for Education Statistics (2015). Education system of Saudi Arabia. https://nces.ed.gov/pubs2016/2016100/app_a15.asp

Northcote, M. T. (2012). Selecting criteria to evaluate qualitative research. In M. Kiley (Ed.), *Narratives of Transition: Perspectives of Research Leaders, Educators & Postgraduates*. Paper presented at the 10th Quality in Postgraduate Research Conference, Stamford Grand, Adelaide, 17-20 April (pp. 99-110). http://www.qpr.edu.au/wp-content/uploads/2015/09/QPR_2012_proceedings-1.pdf.

Navarro, S., Zervas, P., Gesa, R., & Sampson, D. (2016). Developing teachers' competences for designing inclusive learning experiences. *Educational Technology & Society*, 19(1), 17-27.

Pace, D., & Schwartz, D. (2008). Accessibility in Post Secondary Education: Application of UDL to College Curriculum. *US-China Education Review*5(12), 20-26.

Park, C., & Lee, H. (2010). What makes a case study really qualitative?: Show me your evidence, please. *English Teaching*, 65(4), 79-101.

Peck, C. A., & Furman, G. C. (1992). Qualitative research in special education: An evaluativereview. *Issues and research in special education*, 2, 1-42.

Plano Clark, V. L., & Ivankova, N. V. (2016). *Mixed methods research: A guide to the field*. Sage. <https://doi.org/10.4135/9781483398341>

Rao, K., Ok, M. W., & Bryant, B. R. (2014). A Review of Research on Universal Design Educational Models. *Remedial and Special Education*, 35(3), 153–166. doi:10.1177/0741932513518980

- Pope, C., Ziebland, S., & Mays, N. (2000). Analysing qualitative data. *Bmj*, 320(7227), 114-116.
- Rose, D. (2001). Universal Design for Learning. *Journal of Special Education Technology*. 1666-67. 10.1177/016264340101600208.
- Rose, D. H., & Meyer, A. (2000). *The future is in the margins: The role of technology and disability in educational reform. A report prepared for the U.S. Department of Education Office of Special Education Technology*. USDOE.
- Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age*. ASCD. Saudi Vision 2030. (2021a). *Vision 2030. Overview*. <https://www.vision2030.gov.sa/v2030/overview>
- Saudi Vision 2030. (2021b). *Vision Realization Program. Human Capability Development Program*. <https://www.vision2030.gov.sa/v2030/vrps/>
- Shaw, I. (2003). Qualitative research and outcomes in health, social work and education. *Qualitative Research*, 3(1), 57-77.
- Schwarz, N., Groves, R. M., & Schuman, H. (1998). Survey methods. *The handbook of social psychology*, 1, 143-179.
- Smith, S. J., & Harvey, E. E. (2014). K-12 online lesson alignment to the principles of Universal Design for Learning: the Khan Academy. *Open Learning: The Journal of Open, Distance and E- Learning*, 29(3), 222–242.
doi:10.1080/02680513.2014.992402
- Spooner, F., Baker, J. N., Harris, A. A., Ahlgrim-Delzell, L., & Browder, D. M. (2007). Effects of training in universal design for learning on lesson plan development. *Remedial and special education*, 28(2), 108-116.
- Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: an introduction.

- Sundqvist, C., & Ström, K. (2015). Special education teachers as consultants: Perspectives of Finnish teachers. *Journal of Educational and Psychological Consultation*, 25(4), 314-338.
- Tamakloe, D. (2018). A case study of preschool teachers' pedagogical behaviors and attitudes toward children with disabilities. *International Journal of Whole Schooling*, 14(2), 83–103.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. New York: Division for Sustainable Development Goals, United Nations Secretariat. <https://sustainabledevelopment.un.org/sdgs>.
- U.S. Department of Education. (2004). *Twenty-sixth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. <http://www.ed.gov/about/reports/annual/osep/2004/26th-vol-1-sec-1.pdf>
- Wehrwein, E. A., Lujan, H. L., & DiCarol, S. E. (2007). Gender differences in learning style preferences among undergraduate physiology students. *Advances in Physiology Education*, 31(2). <https://doi.org/10.1152/advan.00060.2006>
- Wu, X. (2019, March). What Should Special Education Preservice Teachers Know about Assistive and Instructional Technology? Voices from the Field and Implications for Teacher Preparation. *In Society for Information Technology & Teacher Education International Conference* (pp. 2659-2668). Association for the Advancement of Computing in Education (AACE).
- Wilder, S. (2014). Effects of parental involvement on academic achievement: A metasynthesis. *Educational Review*, 66(3), 377–397.
- Waitoller, F. R., & Artiles, A. J. (2013). A decade of professional development research for inclusive education a critical review and notes for a research program. *Review of Educational Research*, 83, 319–356. doi:10.3102/0034654313483905
- Yin, R. K. (2009). *Case study research: Design and methods* (4 ed.). Los Angeles, CA:

Sage

Yin, R. K. (2003). *Case Study Research Design and Methods*. Thousand Oaks, CA: Sage Publications.

Yin, R. K. (2002). *Case study research: Design and methods*. Thousand Oaks, CA: SAGE Publications.

Zhong, Y. (2012). Universal Design for Learning (UDL). *Library Instruction, College & Undergraduate Libraries*, 19(1), 33-45, DOI: [10.1080/10691316.2012.652549](https://doi.org/10.1080/10691316.2012.652549)

Appendix A

Survey Questions

Likert Scale of 1-5: 1=Strongly disagree, 2=Somewhat disagree. 3= Neither agree nor disagree 4=Somewhat agree 5=Strongly agree

Survey Questions about the teaching method of inclusive classrooms:	1=Strongly disagree	2=Somewhat disagree	3= Neither agree nor disagree	4=Somewhat agree	5=Strongly agree
1. The teaching method is the key to the teaching success					
2. Currently, teachers are following specific teaching strategies to teach students with disabilities					
3. Teachers of inclusive classrooms represent the information in multiple ways to cover students' needs					
4. Teachers need a strategic framework to help them plan their					

teaching method					
5. Special education teachers are capable of leading inclusive classrooms					
6. Leading inclusive classrooms requires special teachers training programs					
7. Teachers should teach all students in the manner they can best learn, not only using standard information					
8. The responsibility for students' success relies on the teachers and their teaching methods					
9. Teaching students with disabilities requires as much effort as teaching inclusive classrooms					
10. The teaching methods and structures					

are the teachers' selection based on the need of each lesson.					
Survey Questions about the inclusive classrooms:	1=Strongly disagree	2=Somewhat disagree	3=Neither agree nor disagree	4=Somewhat agree	5=Strongly agree
1. The inclusive classrooms are the best place to offer equity of the educational opportunities for all students					
2. Students with mild disabilities should be included in the general classrooms					
3. Students with mild disabilities are currently receiving the educational service that meets their needs					
4. Students with mild disabilities perform better when they are in					

inclusive classrooms					
5. Including students in the same school building is sufficient to help them develop awareness of others					
6. It is not necessary to include student with disability in the same classrooms					
7. The inclusive classrooms only benefit students with disabilities					
8. Having students with disability helps typically developed students to learn how to connect with them					
9. The inclusive classrooms are better preparation of the future careers of all students					
10. Inclusive classrooms can be the solution for the					

disconnect between students with disabilities and their peers					
11. The only obstacle to successful inclusive classrooms is the appropriate teaching methods					
12. Inclusive classrooms can help the teachers to provide the lessons using better teaching methods					
Survey Questions about the curriculum and the environment of inclusive classrooms:	1=Strongly disagree	2=Somewhat disagree	3= Neither agree nor disagree	4=Somewhat agree	5=Strongly agree
1. The curriculum is only one factor in the success of the teaching					
2. The curriculum should be the same for students with mild disabilities and their typically					

developed peers in the same grade level					
3. Students with mild disabilities should go through the same assessment process as their typically developed peer					
4. Students with mild disabilities need the same teaching methods as their typically developed peers					
5. The only adjustment required to teach the inclusive classrooms is to vary the teaching methods					
6. Students with mild disabilities need the same length of the lesson and teaching methods as typically developed peers					
7. All teachers have the recourse to					

start inclusive classrooms					
8. The current curriculum can be successfully used in inclusive classrooms					
9. The curriculum should be adjusted to meet all the students' needs					
10. The inclusive classrooms are a great learning environment for all students					

Comments or Suggesti

Appendix B

The Interview Questions

The interview questions are designed to give in-depth data for the research based on the teachers' answers to the following open-ended questions:

(Introductory statement: Please be assured that all the information that you share will be kept confidential and that your name and any other information that might reveal your identity will be protected.)

- 1- We would like to start by asking you to tell me a little about yourself (How long have you been a teacher? Where are you from, where did you study teaching?)
- 2- Why did you choose to become a special education teacher?
- 3- For how long have you been teaching at this school?
- 4- What experience do you have in learning that influenced you to become a teacher?
- 5- Describe a student to me that you enjoyed teaching and you thought you did good job teaching?
- 6- How would you deal with the academic diversity or variety of achievement of students in your classroom?
- 7- What is the general structure of your typical lesson?
- 8- How would you prepare for your activity that will help you reach the goal of the lessons?
- 9- How would you individualize instruction for students to meet their needs?
- 10- How would you help your students to achieve success despite their learning difficulty/ies?
- 11- How do you help your students of different ability to stay engaged with your lessons?
- 12- What procedures do you use to evaluate a student's progress?

- 13- Do you have or follow a framework that helps to guide your teaching strategies and methods? Can you describe it?
- 14- What is the most challenging point of teaching students with disabilities in inclusive classrooms?
- 15- What makes inclusive classrooms provide advantage to all students?
- 16- If there is a key teaching strategy that you would suggest, what would it be?

Appendix c

The 36 Ministry of Education initiatives to be implemented under the program, which aim to contribute significantly to the macro-objectives of the program and the Vision 2030. These 36 initiatives are: (1) comprehensive framework for continuing professional development for teachers and educational leaders; (2) shift to digital education to support student and teacher progress; (3) increase community clubs' entertainment and educational programs; (4) improve the safety and security in school buildings; (5) reduce the administrative burdens of teachers and education leaders to ensure that they focus on the educational process and to improve the quality of support services; (6) encourage private sector to invest in public education; (7) establish a Transformation Office at the Ministry level to support the National Transformation program; (8) apply the Ministry of Education's new operating model; (9) develop a national strategy to upgrade the teaching profession by raising the professional level of teachers, improving the profession's ecosystem and raising the quality of services provided to teachers; (10) improve the quality of primary education; (11) development of nurseries and kindergarten programs and the expansion of their services to cover all regions; (12) improve international study scholarship program and improve its efficiency; (13) develop core life and employability skills and integrate it with curricula and extra-curricular activities; (14) establish King Salman University for Technical & Vocational Education; (15) develop student-centric education model; (16) enhance participation in international scientific competitions; (17) establish technical labs in schools to foster students' vocational skills; (18) attract private investments to finance schools' construction; (19) enhance planning and budgeting efficiency in order to achieve the rationalization of capital and operating expenses; (20) establish a Center for English Language Education Development; (21) establish a Center for Arabic Language Education Development; (22) establish a Center for Development of Healthcare Information System; (23) establish a Center for Science, Technology, Engineering and Mathematics Education Development; (24) project to develop special education/establish a national center dedicated to special education in collaboration with the private sector; (25) establish the e-service framework for universities; (26) establish a practical framework to align university graduates with labor market needs; (27) develop curriculum assessment system; (28) develop and deploy the independent schools model to reach 2000 public schools run by small establishments; (29) develop life-long learning and sustainability; (30) develop an awareness program on investment and entrepreneurship for high schools and university students; (31) enhance the image of the education system in the Kingdom of Saudi Arabia; (32) foster the role of the family in the educational process and promote national identity; develop digitization and GIS information system; (34) establish a database of education statistics, alumni and scientific research; (35) establish an office of strategy management at the ministry level; and (36) develop key performance indicators at ministry level.

Implementation of the listed 36 Ministry of Education initiatives commenced in 2016 as part of the National Transformation Program's 2020 function of supporting the Saudi Vision 2030. The initiatives have been scheduled for five years from 2016 and are to be transparent and goal and achievement driven and measured.

Appendix D

Ministry of Education in an official letter to authorize me to make direct contact with school principals, teachers, and educational institutions.

الرقم: ٣٤-٨٨١
التاريخ: ١٥/٢/١٤٤٣هـ
التشوهات:

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

وزارة التعليم
Ministry of Education

الموضوع: بشأن تسهيل مهمة الباحثة / سارة بنت عبدالله الوقيصي

سعادة مدير عام التعليم بمنطقة الرياض
السلام عليكم ورحمة الله وبركاته

تجدون سعادتكم أدناه باركود و رابط استبانة لطالبة الدكتوراه بجامعة (Indiana) في الولايات المتحدة الأمريكية/ سارة بنت عبدالله الوقيصي بعنوان "تقييم ممارسات معلمي التربية الخاصة بالنظر في التصميم الشامل للتعليم".
أمل من سعادتكم التكرم بالتوجيه باستيفائها من معلمي ومعلمات التربية الخاصة لجميع المراحل الدراسية على الباركود أو الرابط التالي:



<https://cutt.us/1unNX>

وللاستفسار يمكن التواصل مع الباحثة على بريدها التالي: saalwaqa@iu.edu

وتقبلوا تحياتي وتقديري

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EDUCATION

- 2017 -2024 **Doctor of Philosophy**, Indiana University, Bloomington, IN Major: Special Education
Minor: Early Childhood Education
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- 2017 **Master of Science in Education**, Indiana University, Bloomington, IN Major: Special Education
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- 2012 **Bachelor of Science**, Taibah University. Al Madinah, Saudi Arabia. Major: Special Education. Graduated with first class honors.

PROFESSIONAL EXPERIENCE

2020- 2022 **Associate Instructor**, Tutor and Conversation Instructor with the Arabic Flagship Program at Indiana University.

2019-2022 **A Public relations supervisor:** at Saudi American Association for Special Education (SAASPED)

2013-present: **Program Assistant**, Special Education- PhD program. Taibah University. Al Madinah, Saudi Arabia.

UNIVERSITY TEACHING EXPERIENCE

Fall 2020- Present **Associate Instructor**, Tutor and Conversation Instructor with the Arabic Flagship Program at Indiana University.

Summer 2020 **Associate Instructor**, Indiana University, Bloomington, IN Course: Summer Language students' reflection papers and materials collected.

OTHER TEACHING EXPERIENCE

2019- present: **Consultant**, Ministry of Education, Saudi Arabia.

- Consulted with special education teachers of students with learning disability.

2019- 2021: **Educational Coordinator**, Bloomington Islamic Center.IN

- Create learning activities for youth and kids.

- Plan and organize Interfaith programs.
- Host schools' field trips, church activities, and guests.
- plan introduction lessons.

2017- 2021: **Vice President**, the IU Saudi Students Club, Indiana University, Bloomington, IN

- Plan and organize activities for Saudi students at IU.
- Plan and organize social events, workshops, and lectures for Saudi students at IU.
- Create and provide a guidebook for Saudi students at IU.
- Provide services for the Bloomington community under IUsupervision.

Spring- Summer 2018 **Early Childhood Intern**, Bloomington international academy BLISS, Bloomington, IN

- Teach preschool classrooms.
- Helped with mealtimes in an early childhood setting
- Assisted preschool teachers in early childhood lessons and play
- Observed in an early childhood setting and helped to maintain a clean and safe facility.

Fall 2012 **Assistant Teacher**, GterAlnada Elementary School, Al Madinah, Saudi Arabia.

- Volunteered as a special education teacher for second and third grad students with multiple disability.
- Designed program for inclusion classroom for students with multiple disability.

Fall- Spring 2011- 2012 **Student Teacher**, Althaniyah Elementary School, Al Madinah, Saudi Arabia.

- Collaborated with cooperating teacher on classroom and lunchroom behavior management.
- Assisted the teachers with program design and IEP planning.

PRESENTATIONS

2017 **Hawaii University International Conferences** HUIC STEM/STEAM Honolulu, Hawaii.

2019 **Hawaii University International Conferences** on Arts, Humanities, Social Sciences and Education, Honolulu, Hawaii.

2019 **Curriculum and Instruction Research and Creative Activity Symposium (CIRCAS)**, Indiana University, Bloomington, IN

2019 **Special Education Research Seminar SER**, Indiana University, Bloomington, IN

PROFESSIONAL ORGANIZATIONS MEMBERSHIP

2018-Present Council for Exception Children (CEC)

2018- Present American Educational Research Association (AERA)

SERVICE

2018-present **Peer Reviewer**, Hawaii University International Conferences HUIC STEM/STEAM.

2019 **Doctoral Student Leader**, Special Education Research Seminar, Indiana University, Bloomington, IN

2019-2020 **Committee Member**, Funding committee, Indiana University, Bloomington, IN

2018 **Committee Member**, Special Education Research Seminar, Indiana University, Bloomington, IN

2018-2019 **Committee Member**, Recruitment committee, Indiana University, Bloomington, IN

2018 **Session leader**, First International Conference on Literacy, Culture, and Language Education, Indiana University, Bloomington, IN

2018 **Session leader**, Curriculum and Instruction Research and Creative Activit