

**SCHOOLS' READINESS TO EDUCATE CHILDREN  
WITH DYSLEXIA IN AN INCLUSIVE  
ENVIRONMENT: An Investigative case study on a  
private elementary school in Dubai**

استعدادية المدارس لتدريس الأطفال ممن لديهم عسر القراءة في بيئة دامجية:  
دراسة حالة استقصائية حول مدرسة ابتدائية خاصة في دبي

by

**ELHAM OTHMAN**

**Dissertation submitted in fulfilment  
of the requirements for the degree of  
MASTER OF EDUCATION**

at

**The British University in Dubai**

**May 2022**

## DECLARATION

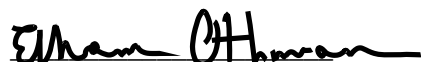
I warrant that the content of this research is the direct result of my own work and that any use made in it of published or unpublished copyright material falls within the limits permitted by international copyright conventions.

I understand that a copy of my research will be deposited in the University Library for permanent retention.

I hereby agree that the material mentioned above for which I am author and copyright holder may be copied and distributed by The British University in Dubai for the purposes of research, private study or education and that The British University in Dubai may recover from purchasers the costs incurred in such copying and distribution, where appropriate.

I understand that The British University in Dubai may make a digital copy available in the institutional repository.

I understand that I may apply to the University to retain the right to withhold or to restrict access to my thesis for a period which shall not normally exceed four calendar years from the congregation at which the degree is conferred, the length of the period to be specified in the application, together with the precise reasons for making that application.

A handwritten signature in black ink, appearing to read 'Eman O. H. Al-Human', written in a cursive style.

Signature of the student

## **COPYRIGHT AND INFORMATION TO USERS**

The author whose copyright is declared on the title page of the work has granted to the British University in Dubai the right to lend his/her research work to users of its library and to make partial or single copies for educational and research use.

The author has also granted permission to the University to keep or make a digital copy for similar use and for the purpose of preservation of the work digitally.

Multiple copying of this work for scholarly purposes may be granted by either the author, the Registrar or the Dean only.

Copying for financial gain shall only be allowed with the author's express permission.

Any use of this work in whole or in part shall respect the moral rights of the author to be acknowledged and to reflect in good faith and without detriment the meaning of the content, and the original authorship.

*Dedication*

*To my parents, for planting the seed of  
passion and eagerness to learn.*

*To my husband, for the kindness, unlimited  
support, and for showing me the best in  
me.*

*To my children, for being heroes and  
bearing with me during the difficult  
times.*

*To Prof. Eman Gaad for the knowledge,  
guidance, and supervision.*

*To Mervat Saleh, for the motivation,  
support and listening along the way.*

## **ABSTRACT (English)**

Schools play the greatest role in developing the children's reading skills and carry the biggest responsibility to discover any difficulties related to literacy. This research paper investigated the ability of a private school located in Dubai to identify and respond to learning challenges related to dyslexia in the elementary stage. The primary objective of the first years in education is to learn how to read. Dyslexia is the most common learning difficulty and at the same time the most hidden one. The researcher examined in this paper the entire experience of students with dyslexia starting from the admission phase until attending an intervention program. The research concluded that the situation of education of those children in an inclusive primary stage could be better. The school in the study is to a good extent ready to educate students with dyslexia in an inclusive setting but, improvements in the staffing, identification and intervention are required for better performance. The conclusion cannot be generalized to all schools, but it is intended to raise awareness about the quality of education offered to children with dyslexia and to help decision-makers recognize the areas for improvement in the current school system in the UAE. The study suggested changes to the current inclusion system to enhance its ability to educate children with dyslexia.

## ABSTRACT (Arabic)

للمدارس الدور الأكبر في تنمية مهارات القراءة لدى الأطفال وتحمل المسؤولية الأكبر في اكتشاف أي صعوبات تتعلق بالتعلم. تناولت هذه الورقة البحثية قدرة مدرسة خاصة تقع في دبي على تحديد تحديات التعلم المتعلقة بعسر القراءة في المرحلة الابتدائية والاستجابة لها. الهدف الأساسي للسنوات الأولى في التعليم هو تعلم كيفية القراءة و عسر القراءة هو أكثر صعوبات التعلم شيوعاً وفي نفس الوقت الأكثر خفية. درست الباحثة في هذه الورقة التجربة الكاملة التي يعيشها الطلاب المصابين بعسر القراءة بدءاً من مرحلة القبول بالمدرسة ووصولاً بحضور برنامج التدخل. وخلص البحث إلى أن وضع تعليم هؤلاء الأطفال في المرحلة الابتدائية الشاملة يمكن أن يكون أفضل من الموجود. تعتبر المدرسة جاهزة إلى حد كبير لتعليم الطلاب الذين يعانون من عسر القراءة في بيئة شاملة ، لكن التحسينات في التوظيف والكشف المبكر والتدخل مطلوبة لتحسين الأداء. لا يمكن تعميم نتائج البحث على جميع المدارس ، ولكن الغرض منه هو زيادة الوعي حول جودة التعليم المقدم للأطفال الذين يعانون من عسر القراءة ومساعدة صانعي القرار في التعرف على أوجه التحسين في النظام المدرسي الحالي في دولة الإمارات العربية المتحدة. اقترحت الدراسة تغييرات على نظام الدمج الحالي لتعزيز قدرته على تعليم الأطفال ممن يواجهون عسر القراءة.

# Table of Contents

Chapter 1: INTRODUCTION.....	1
1.1 Statement of the problem.....	1
1.2 Scope and Objectives of the study.....	2
1.3 Significance of the Study.....	3
1.4 Research questions.....	4
1.5 Limitations of the study.....	5
1.6 Ethical Considerations.....	6
1.7 Structure of the study.....	6
Chapter 2: LITERATURE REVIEW.....	8
2.1 Theoretical framework.....	8
2.2 Conceptual framework.....	9
Background of the topic.....	10
2.2.1 Classifications of Dyslexia.....	11
2.2.2 Neurobiological basis of dyslexia.....	14
2.2.3 Symptoms and Identification of dyslexia.....	15
2.2.4 Screening and Diagnosis of Dyslexia.....	16
2.3 Review of Relevant Literature.....	17
Chapter 3: Methodology.....	24
3.1 Context:.....	24
3.2 Research Approach:.....	24
3.3 Sampling and Rationale Behind Sample Selection.....	25
3.4 Reliability of Data.....	26
3.5 Data collection.....	26
3.5.1 Instruments.....	27
3.5.2 Participants.....	28
Chapter 4: Data Analysis.....	29
4.1 Explanation of the school's inclusive learning environment:.....	29
4.2 Investigating the practices of inclusion in terms of screening and identification of dyslexia and developing the intervention program.....	33
4.2.1 Processes of screening:.....	33
4.2.2 The assessments used in the school.....	35
4.2.3 Deciding on an intervention program and designing IEP.....	36
4.3 Assessing the level of awareness and understanding of dyslexia and its symptoms among language teachers. Finding out what language teachers know about dyslexia.....	37

4.3.1	Analysis of Data provided in the Questionnaire .....	43
4.4	Analysing the school's inclusion policy and its relevance to the country's policy of inclusion: 47	
4.5	Investigating the provisions offered to children with dyslexia in school.....	51
Chapter 5: FINDINGS, DISCUSSION AND CONCLUSION .....		54
5.1	Findings from analysis of data: .....	54
5.2	Discussion .....	60
5.3	Conclusion .....	62
5.4	Recommendations and Future Directions: .....	64
References.....		65
Appendix I .....		71
Appendix II .....		75
Appendix III.....		79
Appendix IV .....		84
Appendix V .....		88
Appendix VI .....		92



## Table of figures

Figure 1: The Inclusion organizational structure as shown in the school inclusion policy.....	31
Figure 2: English teachers' score.....	56
Figure 3: Arabic teachers' score.....	56

## **List of tables**

Table A: Questions and answers of the four Arabic teachers .....	39
Table B: Questions and answers of the five English teachers .....	40
Table C: Provisions available in the school .....	52
Table D: The Percentage of correct answers scored by each Arabic teacher .....	55
Table E: The Percentage of correct answers scored by each English teacher.....	55

## **List of Abbreviations**

SEND: Special Educational Needs Department

IEP: Individualized Educational Plan

IQ: Intelligence Quotient

RQ: Research Question

PA: Phonological Awareness

UAE: United Arab Emirates

KHDA: Knowledge and Human Development Authority

MOE: Ministry of Education

DSM-5: Diagnostic and Statistical Manual 5

P.E: Physical Education

SEN: Special Educational Needs

SPD: Specific Learning Disorder

# **Chapter 1: INTRODUCTION**

Education development has long been a matter of interest for authorities across the world. Although numerous efforts have been made to enhance educational services and conditions, many students and young learners continue to be marginalized. Attempts to deliver a good education to everyone have always been made to guarantee that no one remains excluded. However, it is undeniable that creating truly inclusive schools is one of the most current serious challenges facing educational institutions around the world. This is due to the lack of understanding about building inclusive systems, practices, and policies in schools. (Ainscow et al 2006).

Aligning with the global tendency to enhance a diversified learning environment, it became no choice for educators and school leaders to understand how to build a system that is ready to meet any exceptional need at any stage. In this research paper, the researcher will focus on one of the most common specific learning difficulties among children which is Dyslexia. Although statistics showed that dyslexia is widely spread, it is still considered a hidden problem where children struggle silently.

## **1.1 Statement of the problem**

Dyslexia is classified as a Specific Learning Disorder according to the Diagnostic and Statistical Manual of Mental disorders (DSM 5). It is known to be a persistent disorder that implies difficulties in mapping letters with their sounds in a certain language (del Barrio 2004). Students with dyslexia have difficulty reading and spelling and there is a common misconception around it that dyslexia is related to a low IQ. Schools take the biggest part of the responsibility of teaching children to read. If sufficient information about the problem is provided, those students will be able to avoid numerous complications.

Another misconception is that many teachers tend to consider the low literacy performance of children as being lazy or stupid (Elliott 2014). As a result of this misreading of children's behaviour, dyslexia has become a hidden problem that is underdiagnosed and is limiting children's education. Although dyslexia is among the most common learning difficulties, its origins in the brain and root causes are still unknown (Norton, Beach & Gabrieli 2015). It is a language-related disorder that significantly affects educators and is recommended to be of biological origins mostly genetic (Bogdanowicz 2006). Dyslexia has been observed across every culture researched, and large cross-cultural variations were expected at first. Accumulating findings suggest that its neurological and neuropsychological roots are similar across languages. Formerly, dyslexia studies have mainly focused on the English language while recently, reading challenges in different languages are getting more attention (Peterson & Pennington 2012). To facilitate early intervention, primary school teachers should be able to recognize struggling learners who may have dyslexia-like learning challenges. Given its significance, schools should be more adaptable and responsive to the needs of such students.

## **1.2 Scope and Objectives of the study**

The scope of this research study is the education service that schools offer or are ready to offer to children diagnosed with dyslexia. The researcher performed an investigative study on one of the mainstream schools in the UAE. The study investigated the readiness of an elementary school in Dubai to handle the challenges caused by dyslexia and its ability to respond quickly to its symptoms. School readiness is an important concept, especially for parents, to ensure that students suffering from such difficulty will receive the education service that suits their needs. The study is based in Dubai, United Arab Emirates. The UAE is known for its commitment to quality education. The “School for All” initiative launched in 2010 made

a significant impact on the implementation of inclusion (Badr 2019). It called for practically adopting inclusive education in Emirati governmental schools. The Education strategy for the Emirati Ministry of Education MOE 2010 – 2020 aimed at ensuring that all teachers provide all students with an outstanding education and lessening the dropout rates. In addition; the strategy called for student equality that makes education accessible at reasonable prices to everyone and that students with special learning needs can receive the extra support they need to be integrated into the education system (The Ministry of Education 2010). Based on the UAE inclusion strategy, the study will examine the inclusion of one learning disability in mainstream schools. This study has five main objectives which are:

- 1) To indicate the level of knowledge and awareness of the teaching staff about dyslexia and its symptoms.
- 2) To investigate the process of screening and identification of dyslexia.
- 3) To critically analyse the school's inclusion policy and its relevance to the country's policy of inclusion. And see how the policy can affect students with dyslexia.
- 4) To investigate the practices of inclusion in terms of the provisions available to children showing dyslexia symptoms.
- 5) To find out the challenges facing the inclusion of children with dyslexia in regular classes.

### **1.3 Significance of the Study**

By the completion of this study, it will be possible to identify areas in which the education of children with dyslexia in Dubai could be improved. The significance of this study comes from the scarcity of research on schools' readiness to teach children with dyslexia in an inclusive classroom setting. Research papers discussing inclusion as an approach in education

are abundant, but few research tackled the readiness of primary schools to handle dyslexia as a specific learning disorder. This research is covering this gap by linking the theoretical assumptions of inclusivity of dyslexia to the real practices of schools. To examine the preparedness of the school system to include and teach students with dyslexia in a mainstream setting, a small-scale study is provided in this research. A private primary school in Dubai was randomly selected to investigate the main factors affecting the quality of inclusive education offered to children with dyslexia. This case study is not intended to make any broad generalizations; rather, it is being used to examine the inclusion system of children with dyslexia and identify its flaws and disadvantages. The case study is considered one example of what is currently being offered to children. It is also an eye-opener to suggest what could be offered to better educate them.

#### **1.4 Research questions**

In this research paper, the researcher provides answers to the following research questions:

RQ1: “How well informed is dyslexia to educators?”

RQ2: “Are schools ready to meet the needs of children diagnosed with dyslexia? Or do systems need improvement?”

RQ3: "What are the provisions that should be offered to those children? What could be done to support the development of such learners?".

The research will conclude the significance of dyslexia as an existent learning difficulty in the education system. Is it seen enough by the system, or it is a hidden problem where children are left out suffering alone?

The researcher specified four indicators to assess the school's readiness to handle dyslexia. She used the index for inclusion by Booth and Ainscow (2006) to choose the factors that fit the study. The school's readiness in this research will be assessed based on the below elements:

- A) Teachers' knowledge of dyslexia and its features
- B) Screening, Identification and placement
- C) School inclusion policy
- D) Provisions offered to children with dyslexia in the school

### **1.5 Limitations of the study**

Due to the COVID 19 pandemic and its accompanying precautionary procedures, schools are not giving full access to researchers to collect data through in-class observations. All data collection was done virtually through online interviews and online questionnaires. Class observations could have helped the researcher add a further dimension to the study based on students' reactions to teaching styles in class.

One of the restrictions that the researcher had to deal with was the limited number of research studies that have been conducted in the middle east region on dyslexia, especially from a school perspective. Furthermore, the majority of the studies are recent. As a result, it was challenging to provide different perspectives from earlier studies.

Another limitation of this study is that findings and results cannot be generalized. The research findings are based on an analysis of data collected from one school. It is not a representative sample by any means. The study is just a demonstration of one example of the service offered to children with dyslexia in mainstream schools. The case study here is not meant to pinpoint a school, rather, it shows that if this is the case in one school, it is likely to be the case in other schools.



Another limitation of the study is that parents of children with dyslexia in the school did not provide their input regarding the topic. The researcher designed a questionnaire that was sent to them via email to share their experience with educating their children in the school. Since filling the questionnaire was optional and given the small number of parents, the researcher did not receive responses to it.

## **1.6 Ethical Considerations**

The researcher took all the possible precautions to ensure that children are not vulnerable to any procedure that may cause them any harmful effects. All the interviews with the school staff took place outside the classroom.

Consent was mentioned at the beginning of the questionnaire and the interviews assured voluntary participation in the research and granted the right of participants to withdraw at any moment.

A few steps in the study required a translation from Arabic to English and vice versa. The researcher engaged a professional translator to guarantee the accuracy and consistency of the meanings.

A privacy policy stated that names and other personal details of participants will be kept anonymous to maintain confidentiality and to ensure that participants will provide accurate information. Also, the name of the school is removed to maintain confidentiality.

## **1.7 Structure of the study**

This study is organized into five chapters. The first chapter is an introductory chapter where the problem of research is explained and the research questions are suggested. The second chapter is the Literature review chapter where the researcher presented an overview of

Dyslexia, what it is, its history and its symptoms. The second part of the chapter reviewed what has already been done in previous research on the inclusion of dyslexia. The third chapter is the Methodology chapter. It discusses the methods and instruments used for data collection in addition to their reliability. The fourth chapter is the data analysis chapter where the researcher analysed all the data that were collected through interviews and questionnaires. The last chapter is the findings chapter. The researcher presented the findings and discussed them in the discussion section in addition to suggesting some future practices and research directions.

## **Chapter 2: LITERATURE REVIEW**

This research paper is titled “Schools’ readiness to educate children diagnosed with dyslexia in an Inclusive environment”. The title combines three main concepts that will be discussed in detail in the literature review chapter which are: “Schools’ Readiness”, “Dyslexia” and “Inclusive environment”. Education experts have spent the last few decades promoting inclusion and improving inclusive approaches in classrooms. According to the literature, there has been a lot of research done on inclusion and related themes. Furthermore, research on methods and tools was encouraged to assist schools in adopting an inclusive approach and educators in becoming more responsive to the concept. The researcher used different resources to access literature about dyslexia and schools’ readiness. The researcher primarily used EBSCO databases, Google Scholar, and the British University of Dubai library database. The researcher likewise looked up information on the Education Resources Information Centre’s website (ERIC) and journals of the British Journal in Special Education (BJSE). She also referred to the Emirati Ministry of Education’s official publications and the American Dyslexia Association’s website.

### **2.1 Theoretical framework**

According to child phonology theories, the phonological element of symbols is re-represented several times during normal development. Data from speech perception imply that as children get older, their phonological representations become more segmented and distinctly characterized in terms of phonetic features. This means, that children begin to represent sound parts within words (Goswami 2000). According to one prevalent theory, the challenge for children with dyslexia emerges in interpreting language’s sound structure. This leads to an inability to acquire the systematic links between spellings and sounds. As a result, their inability to learn spelling to sound correspondences is thought to be a major cause of their word

recognition issues (Swan & Goswami 1997). Children with dyslexia are more likely to come up with ideas through feelings and mental images rather than sounds or words. As a result, such students have a difficult time developing a sufficient comprehension of words and symbols (Alsobhi, Khan & Rahanu 2015). And this might represent a limitation to them in a conventional educational context, particularly when it comes to scheduled exams. Because students with dyslexia prefer sensory learning experiences, they will learn more via speech and discussion than through reading. Howard Gardner's Theory of Multiple intelligence encouraged educators to offer a variety of learning styles to students from which they can choose the styles that match their abilities (Hopper & Hurry 2000). Building on Gardner's theory, students with dyslexia need to have access to different styles so that they hear, feel and see the knowledge or they can learn using a combined set of senses. This theory offers the differentiation that helps students have self-confidence and get rid of the stress caused by the conventional education systems.

## **2.2 Conceptual framework**

According to Jabareen (2009), a *conceptual framework* can be defined as a collection of interconnected concepts that collectively provide a thorough understanding of a phenomenon or series of phenomena. A conceptual framework's concepts support one another, articulate their respective phenomena, and build a philosophy peculiar to the framework. In this research, the key concepts involved are inclusion in Education, Dyslexia as a learning disability and building a school system that can support students with dyslexia. Building on the belief that education is a basic human right for everyone, inclusion in education goes by nature as the main school role. The history of educating children with special learning needs is full of discrimination and exclusion (Lyons & Arthur-kelly 2014). For some people, inclusion means the ability to serve children with special learning needs in mainstream schools (Lieberman 2018). However, inclusion is increasingly being recognized as a broader change that

encourages and welcomes diversity among all students on a global scale (Ainscow & Sandill 2010). This Research study is meant to increase understanding of dyslexia and the inclusion of children with dyslexia in education. The research study is based on an engagement with a real-life example of a school that already deals with dyslexia as one of the special educational needs existing among students. It includes an explanation of the nature and origins of dyslexia, as well as how it impacts students. It also entails how schools might be modified to better react to the diverse requirements of pupils.

## **Background of the topic**

**Dyslexia** is a term used to describe a person's inability to read fluently and accurately. This difficulty has no relation to intelligence or hard work (Peterson & Pennington 2012). However, due to the difficulty reading questions clearly, students may score poorly on the IQ test and become vulnerable to being mistakenly misdiagnosed. Fluency is described as the ability to read the text fast, accurately, and clearly (Lyon et al. 2003).

The history of discovering dyslexia started in 1878 when Adolph Kussmaul first used the terminology “word blindness” to describe the difficulty some patients faced while reading common words in the wrong order of letters. He is generally credited with being the first to identify dyslexia as a medical condition. His description of the condition was the base on which Pringle Morgan 1896 formulated his report on one of the cases as congenital word blindness (Morgan 1896). In 1887, Rudolf Berlin -the German ophthalmologist- replaced the term "word blindness," with the term “dyslexia” for the first time (Kormos and Smith 2012 cited in Kaperoni 2016).

Modern research on dyslexia started in the UK and expanded to the US. The Word Blind Centre opened in Bloomsbury in 1962. Following the closing of the Word Blind Centre in the 1970s, other dyslexia-focused organizations were established. The Helen Arkell Dyslexia

Centre (founded in 1971), the Dyslexia Clinic at Barts Hospital (founded in 1971), the British Dyslexia Association (founded in 1972), the Dyslexia Institute (founded in 1972), the Language Development Unit at Aston University (founded in 1973), and the Bangor Dyslexia Unit (founded in 1977) were among them. Some of these centres are still open today, offering assistance to children, their parents, and people with dyslexia, along with professionals in the field. These organizations collaborated with other psychological and education scholars, activists, and practitioners (Kirby 2018).

The *International Dyslexia Association (IDA)* founded in the 1920s is the oldest organization dealing with the study and therapy of dyslexia. It is also dedicated to offering comprehensive information and assistance to tackle all aspects of dyslexia and related reading and writing difficulties (Interdys 2012). The IDA suggested a modified definition of dyslexia in 2003 which stated that:

*“Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.”*

### **2.2.1 Classifications of Dyslexia**

Dyslexia as classified by the Diagnostic and Statistical Manual (DSM-5) is a specific learning disorder. Reading, written expression, and math learning deficiencies are all coded separately. Specific types of reading deficiencies are labelled in various ways as dyslexia worldwide, and specific types of mathematical deficits are described as dyscalculia, according to the book (del Barrio 2004).

A specific learning disorder is a neurodevelopmental condition with a biological basis that is the cause of cognitive impairments that are linked to the disorder's behavioural symptoms. The biological cause is a combination of genetic, epigenetic, and environmental factors that alter the brain's ability to efficiently and accurately perceive and process verbal and nonverbal information (del Barrio 2004).

Dyslexia is commonly thought to be either a “Developmental” or “Acquired” disorder (Patterson et al 1985). There is an argument regarding the difference in symptoms between the two types. There have been comparisons made between "acquired" and "developmental" dyslexia.

**Acquired dyslexia** describes the difficulties in reading and writing caused by injuries to some areas of the left hemisphere that can impede a person's ability to talk, perceive, and read while having no effect on their nonverbal functions (Bishop, Nation & Patterson 2014). People who have Acquired dyslexia started to show symptoms as a result of brain injury. They may have significant difficulty reading and, in some cases, writing. There is no debate that different types of acquired dyslexia can be distinguished. Different patients have a wide range of symptoms (Bryant & Impey 1986). Most of the reading errors of people with Acquired dyslexia are either visual Para-lexias or derivational errors. *Visual para-lexias* are reading words which sound quite different from but looks similar to the correct word such as “were” and “wear”. *Derivational errors* are those errors that happen with reading two similar words in the same way while a letter or two are missing for instance, "weigh" is read as "weight" (Bryant & Impey 1986). (Funnell 1983) mentioned an example of a patient with acquired dyslexia. W.B is 40 years old man who had an accident that affected his brain in 1978. Later after the accident, he complained that he was no longer able to read the newspaper. After examining his case, W.B. was noticed that he could not pronounce single letters as syllabic sounds, yet he

could repeat syllabic sounds properly. He has never complained of any difficulties in reading before the accident.

**Developmental dyslexia** was described just over 100 years ago in the British Medical Journal (Morgan 1896). In one case report, a 14-year-old child named Percy was characterized as having been unable to learn to read despite having a normal IQ. Many dyslexia-related characteristics can be found in Percy's writing, including dysphonic spelling errors (carefully! calfuly), phoneme substitutions (peg! pag), and letter transpositions (Percy! Precy) (Snowling 1998). While adult dyslexia was first noticed in the late years of the nineteenth century (Shaywitz & Shaywitz 2005). The focus of this research is on children who showed difficulties in learning languages with no evidence of any brain injury or damage.

Numbers and facts About Dyslexia revealed that; at least 17 percent to 20% of the population in the United States has a reading difficulty according to the National Institute of Child Health and Human Development (NICHD). This indicates that in every five children, one child will have major difficulties learning to read, which mostly remain until the adolescent years (Wadlington & Wadlington 2005). Numbers on dyslexia in the middle east are unavailable. There has been few research on the prevalence of dyslexia in the Arab world. Despite efforts by various Arabic educational administrations to enhance knowledge of learning difficulties and special educational requirements throughout the region, dyslexia is rarely recognized as a specific reading difficulty. Neither educational psychologists nor special education teachers have access to specific Arabic methods for dyslexia identification, evaluation, or diagnosis (Al-ghizzi 2015). The lack of dyslexia assessment tools in Arabic led to the ambiguity of the exact size of the problem in the Arab world.



### 2.2.2 Neurobiological basis of dyslexia

Research studies on neurology proved that there are differences in how the brain looks like in dyslexia versus non-dyslexia cases. For teachers, understanding the neurobiology of dyslexia could be helpful as it defines the sort of intervention. It has been proved that readers with dyslexia demonstrate less increase in brain activity in the temporoparietal and occipitotemporal regions (Kearns et al. 2019). Neuroimaging results currently tend to indicate something that traditional intervention studies do not seem to be able to show. Successful intervention alters the activation patterns of children with dyslexia, but the patterns remain distinct from those of individuals with typical achievement. One key discovery is that readers who respond to the intervention had increased activation in the precentral gyrus, which is responsible for the articulation (physical formation) of sounds in the mouth (Kearns et al. 2019).

Norton, Beach & Gabrieli (2015) summarized the most known causes of Dyslexia in three categories which are:

1. Lack of *phonological awareness* (PA) for spoken language, which anticipates and correlates with dyslexia. Learning to read needs explicit knowledge and practice, whereas learning to speak a language is practically straightforward. To transfer those units of sound onto their corresponding printed letters, children must first become aware of the phonological structure of words.
2. *Rapid automatized naming*, or RAN is a second deficiency associated with dyslexia. Slow naming could indicate a problem with the integration of cognitive and linguistic processes required for fluent reading. Children who are particularly poor readers frequently have impairments in both PA and RAN, although other children only have one of these weaknesses.

3. *Basic perceptual processes* that may support the more basic PA or RAN impairments, such as temporal sampling or processing, visual-spatial attention, or perceptual learning deficits, are a third group of suggested causal explanations for dyslexia.

### **2.2.3 Symptoms and Identification of dyslexia**

There is a set of symptoms that indicates dyslexia. Showing some of the symptoms of a child should be enough reason to do a professional assessment. According to Schulte-Körne (2010), Primary symptoms of dyslexia include:

1. Significant low-speed reading: Children with dyslexia tend to take two to three times the duration that their peers need to read a text. As a result, difficulty in understanding the text.
2. Associating letters to sounds is slow and resulting mistakes happen. Children with reading disorders tend to read words that have similar letters in place of difficult-to-read words.
3. Significantly big number of spelling mistakes. Around 10% of a 40 words test is correctly spelt by children with a spelling issue.

All these challenges may result in limitations in the development of vocabulary and background knowledge (Lyon et al. 2003). The accompanying difficulties of dyslexia are not of any relation to age or intellectual abilities and do not result from any developmental disabilities (Bogdanowicz 2006).

The difficulties caused by dyslexia in children include but are not limited to the following:

1. Dyslexia is accompanied by several negative effects, including poorer academic performance and self-esteem in the classroom. Furthermore, children with dyslexia read

notably less outside of school than their peers, resulting in a growing reading abilities gap (Norton, Beach & Gabrieli 2015).

2. Learning words/letters/sounds; spelling, phonic writing: for instance, handsome/handsom are all affected by visual and auditory perception and processing. Letters can be flipped around, mirrored, or substituted with ones that are identical (Bogdanowicz 2006).
3. Children with dyslexia have difficulty retrieving phonological knowledge from long-term memory. Clinically, word-finding troubles are common, and experimental studies involving both rapid name and object naming tasks have revealed deficits (Snowling 1998). Using words fluently and accurately is a challenging skill to develop in children with dyslexia (Studies 2018).

#### **2.2.4 Screening and Diagnosis of Dyslexia**

Research studies from English-speaking cultures have looked at the variations in language and cognitive skills between typical readers and children who have (or are at risk of having) reading difficulty. Furnes & Samuelsson (2010) clarified that children with reading difficulties had deficits in Letter Knowledge, Phonological Awareness PA, Rapid Automated Naming RAN, Verbal Memory, and semantic and syntactic skills. Individual differences in literacy development over the normal range, as well as reading challenges, can generally be predicted in the case of using the same linguistic and cognitive skills.

One of the screening approaches is the 'response to intervention' RTI approach. It was pioneered in the United States. It recommends that instead of conducting a static assessment of a group of children's existing abilities, this method entails tracking their growth through an intervention program. The most vulnerable children are those who do not respond to effective teaching and can be easily spotted using this method (Snowling 2013).

In the United Kingdom UK, most children follow the National Curriculum, and reading is taught through systematic phonics training. Teachers, schools, and local governments routinely collect a huge amount of data about every child. Every child has a record called the Early Years Foundation Stage Profile EYFSP, which is designed to be used to identify children who are "at risk" of academic failure. The assessment of children's growth at the completion of the Foundation Stage (ages 3 to 5) was first implemented in English schools in 2003. Following this, all schools and early childhood providers were required to present a curriculum that was aligned with the EYFS for children from birth till the age of 5.

To diagnose dyslexia, there is no specific one test, rather it is diagnosed through a whole process. Diagnostic tests of dyslexia are mainly used to determine whether or not a child has a delay and if so to what degree (Elbeheri et al. 2006). One of the primary objectives of dyslexia tests, according to Farmer, Riddick, and Sterling (2002), is the profiling of a student's strengths, limitations, and learning style.

### **2.3 Review of Relevant Literature**

From the review of the relevant literature, it was noticed that the inclusion of students with exceptional learning needs in the UAE was non-existent before the year 1971 (Gaad 2004). Around 90% of the community's population was illiterate at this time in history. (Talhami 2004 as cited in Gaad 2010). The UAE was committed to education development since the oil age began in 1971. This development included promoting the concept of inclusion in general schools but it was not effective until the year 2006 federal law No 29, the year 2006 was enacted by his highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE. Article (12) of this law states that the country ensures that people with special needs have equal educational opportunities in all educational institutions, as well as professional qualifications, adult education, and continuing education. It can happen in either normal or special classes. In

addition to Article (15) concerning the provisions that should be granted to students with special learning needs in schools. The article directed that a special committee should be responsible for putting executive programs to ensure equal chances in education for special needs individuals starting from early infancy in all educational establishments in their regular classes or speciality units of education. Given this remark, it should be clear that provisions exist in mainstream schools to ensure the fairness and assistance of such students (Gaad 2010). The introduction of this law represented a turning point in the education system toward a better inclusion. However, a study conducted by Gaad and Thabet (2009) revealed that the reality was different. Gaad and Thabet (2009) discovered that: Due to a lack of knowledge, resources, training, and facilities, a substantial number of teachers disagreed with the proposed inclusion policy. Teachers in this study expressed concern that some critical factors must be addressed to establish effective inclusion in normal schools. Teachers need more training in the field of special education, as well as specialized individuals to guide and assist them with understanding the different special needs and disabilities, teaching styles, and special education. Until that time, there were not enough specialists available to provide such help in most schools, so it is essential to conduct training for teachers in many areas of disability (Gaad 2010). The study concluded that most schools lack the suitable facilities and equipment that meet the needs of students with disabilities especially hearing and sight impairments. The limited budget was also one of the obstacles to inclusion. Staffing qualified teachers and helpers was another common complaint of most of the schools' leaders. They agreed that teachers who understand special education and differentiation are few.

More research studies were conducted in the UAE to explore what should be done to help the Emirati schools adopt an effective inclusive education approach. The index for inclusion is a useful publication that explains what inclusion entails in all its forms. It facilitates a helpful self-evaluation and development process that draws on the knowledge and perspectives of

practitioners, children and young people, and parents. The index for inclusion was used on a wide scale in the UK. Then, it was translated to over 30 languages and was used in many countries around the world. The index for inclusion was used as a framework for schools' review in a study by Alborn & Gaad (2014) to investigate the inclusive provisions introduced by three schools located in Dubai based on the "School for all initiative". The findings of the study are reported in terms of the three essential school dimensions of cultures, policies, and practices based on the 'Index for Inclusion.' Barriers to participation and learning, such as a lack of appropriate training, proper support services, and inclusive classroom architecture, emerge as themes from the research.

Bock (2015) conducted an exploratory study addressing the inclusion of special educational needs students in the Emirati mainstream schools. The study investigated the perspectives of teachers on the inclusion of SEN students in regular classrooms. A total of seven teachers and four parents took part in the study, which was done through purposive sampling. The findings of the data analysis revealed that UAE teachers faced a variety of challenges as a result of the inclusion of SEN pupils in their classrooms. Lack of professional training, managerial assistance, parental pressures, cultural obstacles, and a lack of collaboration possibilities were among the challenges. The study suggested a variety of professional development workshops meant to increase knowledge of SEN and inclusiveness in the UAE.

Most of the previous studies and more looked into schools' performance in terms of inclusion, in general, came to the same conclusions: teachers lack awareness and training, the school management is not always supportive in providing the necessary systems and provisions, and policies and procedures are not well communicated to practitioners. Limited time was a major issue for many educators. Teachers are typically stressed as a result of spending more time helping kids with special needs academically and socially, they considered this an additional

responsibility for which they are unprepared (Gaad & Thabet 2009). So, research proved that efforts need to be directed towards staff professional development to provide good inclusive practice in schools.

Speaking about dyslexia, Research on dyslexia, in particular, is scarce according to AEIbeherri and Everatt (2007). It has been noticed that scholars in the Arab world are paying close attention to inclusive education in general. However, dyslexia research and its prevalence in the middle east are both significantly lacking. In addition to the limited number of studies available on dyslexia, most of the studies are recent.

Dyslexia, a term once avoided by educational practitioners due to the ambiguous and frequently incorrect connotations it elicited. It has recently earned greater attention after modifying the relevant regulations (Gonzalez & Brown 2019). Myths about dyslexia are noticeably common such as it is a result of brain damage, related to a low IQ score and it is more common in boys than girls. These myths and misconceptions are due to a lack of awareness of the problem (Williams & Lynch 2010).

Diagnosing Dyslexia cannot be made before the child starts officially learning a written language. By the age of 4 years, phonological awareness develops. It is considered to be the main indicator of dyslexia. If the child showed some difficulties while learning a language such as word segmenting, rhyming, or phonological difficulties, it should be investigated using tests that measure phonological skills (Habib & Giraud 2013). The low academic achievement of students with dyslexia in reading and spelling leads teachers to have low expectations from those children. Consequently, it leads to stigmatization which means that instead of basing teachers' judgments on the distinctive traits of students, a negative attitude is established toward a group of them due to some difficulties (Hornstra et al. 2010).

In 2018, a research study was conducted in the UAE to investigate the awareness of teachers about dyslexia and how their perception about it can affect the intervention with students at risk of dyslexia. In her study, Benkohila (2018) used a mixed-method approach to provide a conclusion regarding the research problem. She performed a quantitative study to examine teachers' awareness of dyslexia in UAE general schools. A questionnaire was designed and distributed to 50 teachers to test their knowledge about the topic of study. Only 29 teachers participated by completing the questionnaire. The results showed a majority of teachers provided correct answers to 7 out of 11 questions in the questionnaire. The study concluded that teachers had a fair awareness of dyslexia as reading difficulty, but they were uncertain about its characteristics. The qualitative approach was used in the second part of the research where the researcher herself was the teacher. She performed a case study to analyze the process of intervention with a 17-year-old child diagnosed with dyslexia. The study revealed that teacher awareness of dyslexia could have a beneficial impact on identifying and serving students with dyslexia. Moreover, the study showed that enhancing the phonemic and phonological awareness of the students with dyslexia in the case study generated remarkable outcomes (Benkohila 2018).

A study conducted in Turkey came to similar conclusions as to the previous study. The fact that two research in two separate regions came up with similar results shows that Dyslexia is still a new topic for educators and that their knowledge and expertise are limited. Sümer Dodur & Altındağ Kumaş (2021) focused their research on teachers who worked with students with dyslexia on daily basis. The goal of this study was to assess 260 primary school teachers' understanding and knowledge of dyslexia and characteristics that may be related to it. The researchers assessed their knowledge by their scores on the Knowledge and Beliefs about Developmental Dyslexia Scale. The findings revealed that these classroom teachers lacked sufficient knowledge of dyslexia and did not feel prepared to teach dyslexic kids. The



researchers recommended enhancing the professional training offered to the teachers regarding the topic. They also called for increasing workshops, publications, and awareness seminars about dyslexia to help spread awareness of the topic. The most important thing that teachers need to know about dyslexia is that low school performance could be the first indicator of dyslexia. It is also irrelevant to IQ score and has nothing to do with laziness or extra effort. Many smart and successful people are known to be diagnosed with dyslexia (Rello & Baeza-Yates 2013). It is also necessary to note that dyslexia can sometimes become over-diagnosed. This means that teachers may label any poor reader as a dyslexic child. Unfortunately, this may limit the child's opportunity to receive the proper diagnosis and instruction tailored to his or her needs. The term "poor reader" refers to someone who is a bad reader on a behavioural level. Many complicated influences from both internal and external sources influence the behavioural outcome in the end (Frith 1995). Poor reading can be caused by a variety of circumstances, including individual differences, vision impairment, shyness, or inattention. Before any prejudice from practitioners, a specialized diagnostic should be made.

A recent study conducted in 2020 investigated the effectiveness of educational services provided by a bilingual private school that follows an international curriculum in the United Arab Emirates. The study was made for two Arabic students speaking English as an Additional Language who have been diagnosed with dyslexia. Data was gathered from observations, field notes, semi-structured interviews, and document analysis using a qualitative, single case study technique. In Year 6, the kids were observed in inclusive general classrooms in English and Arabic, as well as pull-out sessions for further English literacy support. The findings revealed that the school provides adequate educational services to both children, but that the students are unable to access the Year 6 curriculum in English. There are no Arabic literacy support services available. There are no Arabic literacy support services available. A lack of

collaboration among teachers, administrators, and parents, as well as an ambiguous vision of inclusive education, had a severe impact (Education 2020).

## **Chapter 3: Methodology**

### **3.1 Context:**

This research investigated the inclusion of children who show symptoms of dyslexia in its different levels and the provisions offered to them in mainstream schools. The study is based in Dubai and a private mainstream school in the city was taken as a case study. The cultural aspect in the UAE community toward disabilities cannot be ignored when speaking about inclusion. A child with a disability is more likely to be stereotyped and stigmatized due to cultural views. Arif and Gaad (2008) clarified that by giving examples of the understanding of disability in their study of special needs education in the UAE. They found that insensitive vocabulary, such as 'retarded,' was observed among staff in government schools, and was also documented in reports provided to parents and maintained on a child's record for life. Since such words are still being used in the community, children with dyslexia can be misunderstood to be unable to learn or not smart enough to be educated in schools. This factor will be examined by measuring the awareness of teaching staff of dyslexia.

The case study in this research looked at a primary school located in Dubai as an example of the existent system to identify and include children with dyslexia in schools. The school is a private, independent school that offers an international American curriculum to students in Kindergarten through Grade 12 to satisfy the demands of Dubai's multi-national community. Since this study focuses on the services provided to the elementary stage, the researcher collected data that is only related to students in grades 1 to 6.

### **3.2 Research Approach:**

The researcher chose the case study technique because it is the most suitable for conducting an investigative study. This paper presents an investigative study to see the actual

situation of educating children with dyslexia in mainstream schools. The study was conducted using a qualitative approach that has a quantitative component. In other words, Data were mostly collected through qualitative instruments such as semi-structured interviews and a quantitative tool, an online questionnaire that included close-ended questions. This online questionnaire was used to measure the knowledge of dyslexia that the language teachers have. Answers to the questionnaire were analyzed in figures that reflected the level of understanding of the topic. Both kinds of data were blended and analyzed to reach the research findings. As a result, this research adopted a case study that is qualitative in nature, but it can be classified as a mixed method since a quantitative component exists.

### **3.3 Sampling and Rationale Behind Sample Selection**

A randomly selected regular private school located in Dubai that has an inclusion department. The school follows an American curriculum and accepts students from kindergarten to Grade twelve. A questionnaire is done as part of the case study to assess the knowledge of the language teachers about dyslexia. Since dyslexia is a language-related disorder, purposive sampling was followed to determine the teachers who should participate in the questionnaire. In purposive sampling, the researcher determines what information is required and sets out to discover people who can and will supply it based on their knowledge or experience (Etikan 2016). Only language teachers filled in the questionnaire.

The school's vice principal was interviewed representing the school management's vision of inclusion. The head of inclusion was also interviewed to explain the structure and role of the inclusion department in the school and how they support children with dyslexia and the provisions offered to them. Finally, the school counsellor was interviewed to provide information about the screening and identification process.

### **3.4 Reliability of Data**

The design of the research, clarity of objectives, organization, language, and simplicity of questions all worked together to prevent providing false information that could affect the results' validity. The research's validity was enhanced by a purposeful sample that was representative of important informants in a specific inclusive-setting scenario. The selection of factors to investigate in the school was done based on the index for inclusion by Booth and Ainscow (2011).

The questions included in the questionnaire to measure the language teachers' knowledge of dyslexia were based on the article titled "Dyslexia: what teachers need to know" by Williams and Lynch (2012) in addition to the index of dyslexia. The researcher provided a reference for the correct answer for each question listed in the questionnaire.

Questions and documents that needed translation from Arabic to English have been revised and checked by a specialized translator.

### **3.5 Data collection**

According to the index for inclusion, inclusive education involves putting values of inclusion into practice. This involves efforts to improve the learning environment for both practitioners and children (Smith 2005). The researcher used a case study as a research method. According to Yin (2003), case studies can be categorized as descriptive, explanatory, or exploratory; this case study can be characterized as exploratory because the main objective from doing it is to explore the current education service offered to children with dyslexia.

The case study is done at a regular private school in Dubai. The researcher contacted the school by communicating with the vice principal via email. She explained to her the main purpose, scope, and procedures of the study. She also provided all the guarantees that the study

will cause no harm to students and that participation of the school staff is entirely voluntary. Data was collected using a variety of instruments. To investigate the main factors affecting the inclusion of children suffering from dyslexia in the regular classroom setting, data were collected through a mixed method approach where qualitative and quantitative data were integrated and analyzed for the interpretation of the findings.

### 3.5.1 Instruments

The researcher collected data through those instruments:

- 1) *Online questionnaire* was sent to the elementary stage language teachers to assess their knowledge about dyslexia and their understanding of its symptoms. This questionnaire was sent to the language teachers (Arabic staff and English staff) through the vice principal. The questionnaire was produced in English and sent to the English teachers, while another version was created in Arabic and distributed to the Arabic staff to complete. The researcher clarified to the participants that their participation is voluntary, all their responses and identities will be kept confidential, and their replies will be used for research purposes only.
- 2) *Semi-structured Interview* with the “school’s vice principal” to understand the culture of inclusion in the school and how the inclusion policy is being implemented. In this interview, the researcher’s main objective was to learn about the school’s management perspective on implementing inclusive learning. The researcher asked the vice principal some open-ended questions allowing her to explain her role in promoting inclusion in the school and to explain how the school is prepared to meet the different needs of students. The researcher communicated the objective of the interview to the interviewee before she started. She also clarified that her participation is voluntary and her identity will be kept anonymous.

- 3) *Semi-structured interview* with the “Head of inclusion”. In this interview, the researcher collected data about how the inclusion department is structured and what are the provisions offered to children with Specific learning needs. The researcher communicated the objective of the interview to the interviewee before she started. She also clarified that her participation is voluntary and her identity will be kept anonymous.
- 4) *Semi-structured interview* with the “school counsellor” to look into the internal process of screening and identification of dyslexia and determine its strengths and weaknesses, if any. The researcher shared the objective of this interview with the interviewee and got his permission. She also explained that it is a voluntary participation and his identity will be kept anonymous.
- 5) *Documents analysis* that included investigating the “school’s inclusion policy”, “the KHDA report” and the “KHDA school guidance for Inclusion”.

### 3.5.2 Participants

The researcher collected data from different members of the school staff. The school vice principal was so cooperative and provided information from the perspective of the *school management*. She is also given the title of “inclusion champion” in the school. This title reflects her commitment of her to fostering the act of inclusion in the school. Data about the *Inclusion department* was collected from the Head of the Inclusion department and the school counsellor. Data about **teachers’ knowledge** of dyslexia were collected from 9 teachers. Four teachers from the Arabic department and five teachers from the English department filled in the researcher’s online questionnaire. All of them are teachers in the elementary stage.

## **Chapter 4: Data Analysis**

In this chapter, the researcher analysed the data that she collected from the vice principal's interview (See Appendix I), the head of the inclusion's interview (See Appendix II) the questionnaire filled by the language teachers (See Appendix V & IV), the Interview with the school counsellor (See Appendix III) and the school's inclusion policy (See Appendix VI), to complete a full picture of the inclusive practices in the school and the provisions offered to children. After that, the researcher connected the relevant data and organized it into five sections. Each section covers in detail one of the aspects of inclusion in the school. The five sections are designed in such a way that meets the study's five objectives. The relevant data to each of the objectives were gathered from the different sources and combined under the relevant title.

### **4.1 Explanation of the school's inclusive learning environment:**

The school is a relatively old institution with two branches located in Dubai. The curriculum is based on the American system, with some modifications to reflect Emirati culture and a conservative background that prioritizes Islamic principles. The majority of students and teaching staff speak Arabic as their first language. Although English is the primary language of instruction, Arabic and Islamic courses receive special attention, and the school excels in both. The school is divided into two sections "Boys section" and "Girls section". In the elementary stage, classes are mixed which means both boys and girls attend the same classes then starting in grade 4 they separate into two different buildings. The school accepts students with different needs regardless of their colour, gender, or nationality and offers them the best possible services, even if this demands adjustments to the school property.



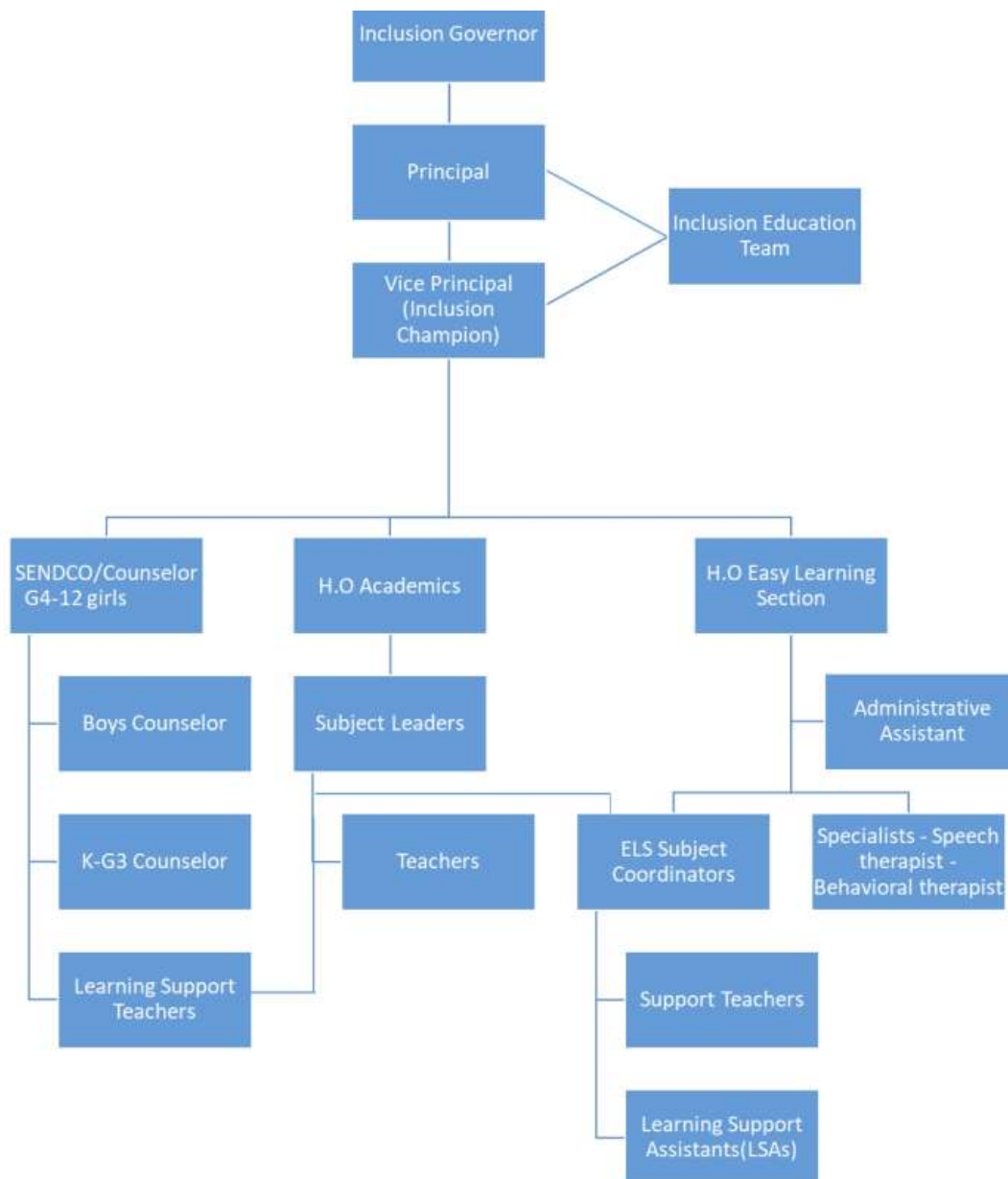
The school encourages students of determination to participate in school events and activities. The leadership of the school advises the staff to never isolate themselves. The school also provides many services that the students may need, such as occupational therapy, language and speech therapies, and any class modifications that they may require. Based on the KHDA guidance, students of determination are grouped into three categories (tiers). Those categories are meant for administrative purposes not to label students. The three tiers are: Tier 1, which includes children who attend in a general class setting and need mild support. Tier 2; includes children who receive general education but in a small group setting and need moderate support. They attend scheduled support sessions. Tier 3; includes children who receive special education in a special setting and need intensive support and intervention.

Figure (1) below shows the organizational structure of the Inclusion department. It illustrates how the inclusion responsibilities are shared among different individuals in the school. It starts with the school principal and flows down to the academic department in coordination with the inclusion department. It also showed that the inclusion department, which is led by the “inclusion champion”, is divided into two main sections: Easy Learning and Special Educational Needs (SEN). The Easy Learning department is responsible for educating children who are being taught a Para curriculum (Tier 3). The Easy learning department offers all the additional services that children may need such as occupational therapy, speech and language therapy and skills development. Those children are attending the para curriculum along with the additional services such as occupational therapy or speech and language therapy and at the same time, they are registered in regular classes where they attend the regular sessions of activities, arts and P.E classes.

The SEN department fulfils the needs of children with special educational needs who are attending the regular curriculum with some modifications and adaptations (Tier 1 and 2).

Those children are enrolled in a special education plan that may involve pull-out sessions in addition to their regular classes.

**Figure 1:** The Inclusion organizational structure as shown in the school inclusion policy



The main responsibilities of the **school governor** with the assistance of the inclusion team are to ensure that admission of SEND students to the school follows the SEND admission policy. And, to make sure that the necessary provisions are made for all students with SEND. In addition to maintaining a high level of staff awareness of their responsibilities towards students with special educational needs.

The roles and responsibilities of the **inclusion champion** and the **head of inclusion** are:

1. Managing the school's SEND Policy on a day-to-day basis.
2. Providing access to the entire curriculum for students with special educational needs and/or disabilities.
3. Scheduling, task delegation, advising, assisting, monitoring, team meetings, and individual consultations are all part of her managerial role. Supervising the
4. IEP development, management, and evaluation, as well as alternate instructional practices. If necessary, create specific curricula/teaching programs.
5. To attend meetings with parents and guardians.
6. Organizing regular planning meetings, preparing referrals, and attending meetings with outside organizations.
7. To track the students' development based on the available evidence. Budgeting and resource management. Guiding a variety of teaching approaches that support individual students' learning styles.
8. Analyzing assessment data to promote effective teaching and learning The SEND school policy has been updated to reflect recent legislative developments.

## **4.2 Investigating the practices of inclusion in terms of screening and identification of dyslexia and developing the intervention program**

Although using some expressions such as “Special Educational Needs” sometimes represents a barrier to inclusion, it is important in the phase of identification. The identification of the children’s needs is important in setting the policy framework, writing the Individual Educational plan and in defining the suitable practices (Booth et al 2002). Based on this, the index for inclusion encourages schools and nurseries to use the term “Learning Support Coordinator” instead of “Special Educational Needs Coordinator” to describe the practitioner who provides this service to the children as it better reflects the inclusive practice.

Dyslexia significantly affects the ability of a child to learn a second language as the language skill is significantly dependent on the phonological awareness PA. Early identification of dyslexia can help manage the disability in a variety of ways, including identifying particular deficiencies or impairments for targeted intervention, determining the severity of the problem to direct educational requirements accordingly, and assessing treatment outcomes (Gharaibeh 2021).

### **4.2.1 Processes of screening:**

In this part, the researcher analysed the data that she collected from the interview with the head of inclusion, the interview with the school counsellor, the school’s website and the school’s inclusion policy (See Appendix VI). The main objective of the school counsellor’s interview was to learn more about the screening and identification process for children with dyslexia, as well as the possible accommodations, adaptations, and modifications offered for those children. To understand the real procedures of identification, the data from the interviews were matched with the data from the inclusion policy. The researcher organized the data and formed a complete picture of the procedures that the school follows to admit students to the

educational support services. Three different processes are followed based on three possible scenarios while registering children in the educational support services.

*A) When a child with special needs is enrolled in the school, the following procedures are followed:*

When parents are aware of their child's situation, the school begins the first phase. During the admissions process, parents are requested to sign a declaration stating whether their child has any special needs or conditions. Parents who have declared a specific condition are required to provide a diagnostic report. The school admits the student, conducts an internal needs assessment, and examines the diagnostic report to determine the type of intervention.

*B) When subject teachers report signs of learning difficulties the following procedures must be followed:*

The second process is that the school follows when teachers report symptoms of any delay or low academic performance. The head of subject should be consulted in the first place. He is the one who keeps track of each child's academic progress. Before admitting a child to a support program, the inclusion team should ensure that this delay is not a one-time occurrence or accidental but rather a consistent occurrence. Then, the teacher is asked to observe the child and fill in a checklist that measures different skills and abilities and the teacher should mark the areas where he/she notices a delay. If the academic delay was consistent, an IQ test is made to measure the intellectual abilities of the student. In addition, an internal diagnostic assessment is made for the child to decide the case and his/her needs. Finally, a meeting is made with the family to communicate the findings and the school's recommendations. This meeting should result in a decision regarding the following steps and intervention program then design the IEP.

*C) Early identification of dyslexia; what the school does to spot dyslexia-related challenges before the child has difficulty with the curriculum:*

The third process is for screening for early identification: By the beginning of every school year, the school conduct a training program for all class and subject teachers in which they learn about the different learning difficulties. Teachers are asked to notice if any child shows such difficulties. Two weeks after the start of the academic year, teachers are given a checklist with a scale of skills and abilities to fill out for each student. Those checklists are handed to the inclusion department to spot the area of delay and identify pupils who showed any form of delay. A second checklist should be sent to the parents of those children to ensure that they are experiencing the same symptoms at home and that it is not due to shyness or fear of school. If the family's checklist indicated the same symptoms, a diagnostic test will be made for those children to indicate the disorder. A meeting is organized with the family to communicate the result and to plan for the intervention program.

#### **4.2.2 The assessments used in the school.**

A list of SEND assessments is mentioned in the school policy to be used by specialists during the screening and identification phase. However, during the interview with the school counsellor, it was concluded that there are a range of exams that the assessment specialist can choose from even if it was not mentioned in the policy. This depends mainly on the assessor's preference. The assessments listed in the inclusion policy are:

1. Stanford Binet Benchmark
2. LDDRS
3. Peabody Picture Vocabulary Test
4. Ravens Progressive Matrices (RPM)

5. Vineland Adaptive
6. Behavior Scale Beta 111
7. Learning difficulties tests
8. IQ Tests

The interview with the school counsellor also added an assessment developed by an Egyptian professor named Dr Fathy Al Zayyat. This assessment is used to indicate dyslexia in Arabic but it is not enough for the full assessment so, teachers follow the same assessments of Dyslexia in English in addition to this Arabic assessment.

#### **4.2.3 Deciding on an intervention program and designing IEP**

After a child is diagnosed with dyslexia, an Individualized Educational Plan/Program (IEP) should be created. It is the framework for the intervention strategy that the school will follow with the children. The IEP contains information about the child's present academic achievement as well as specified short- and long-term goals that should be met. Parents, teachers, as well as other related early intervention service providers (e.g., the school psychologist, and literacy experts) work together to design IEP goals. Several evaluation techniques and strategies must be used to enhance the formulation of an IEP. The IEP should reflect the child's present abilities and performance, and it should be modified to fit the requirements of each child (O'Connor & Yasik 2007). According to the school's inclusion policy, IEPs are created and implemented in collaboration with heads of subjects, teachers, parents, and students, based on the recommendations of the Inclusive Education Action Team. The inclusion champion supervises the development and implementation of an IEP.

Based on the needs assessment and teachers' recommendations the child is given support sessions. As described by the school counsellor, the support sessions are pull out sessions that usually happen in the activities classes such as library, PE or Art. Support classes

should work on two areas; the academic knowledge where the support team help the child catch up with what he/she could not understand in class and Skills development classes where the special education teacher works on developing the phonological skills, memory, Rapid naming and related skills.

#### **4.3 Assessing the level of awareness and understanding of dyslexia and its symptoms among language teachers. Finding out what language teachers know about dyslexia.**

To have a closer look at the educators' understanding of the problem of study, the researcher designed a tool for assessing teachers' knowledge of dyslexia. This teachers' questionnaire (Appendix IV & V) was used as an indicator of the training and orientation that the school offers to language teachers as well as their perception of dyslexia. All the questions in the questionnaire are derived from the article titled "Dyslexia: what teachers need to know" (Williams & Lynch 2010). The article included all the basic information that teachers need to know about dyslexia to be able to teach students with dyslexia in their classes.

It is widely acknowledged that good instruction is essential to a successful education. However, when it comes to dyslexia and similar learning difficulties, defining good instruction can be challenging. In this case, finding the appropriate and suitable ways of instruction becomes the main concern. The teaching approach must suit and match the needs of the student. The way teachers teach in class is determined by their understanding of dyslexia and its effects on students. In fact, this could be a promising research topic in the future. To provide professionals with dyslexia with the information they need to design paths of illumination, it is necessary to identify misconceptions and knowledge gaps (Wadlington & Wadlington 2005).



To support proper intervention, primary school language teachers should be able to recognize struggling learners who may have dyslexia-like learning impairments. Considering this significance, a questionnaire was designed to assess the knowledge of the elementary stage Arabic and English teachers about dyslexia. The questionnaire consisted of twelve questions about dyslexia. The questionnaire was available in both languages English and Arabic (Both copies are in Appendix 1). The English version was sent to the elementary English teachers while the Arabic teachers received the Arabic version. The questionnaire was designed in three groups of questions covering: characteristics of Dyslexia, Symptoms of dyslexia and teaching strategies for dyslexia.

Nine teachers participated in the questionnaire; five of them are English teachers and four are Arabic teachers. Responses are organized in tables A and B below. The researcher classified the questions in the questionnaire into three categories which are Characteristics of dyslexia, Symptoms of dyslexia and strategies to educate children with dyslexia. The researcher chose this method for organizing data to be able to figure out the areas with a lack of knowledge as well as the level of the existing knowledge.

In tables A and B, the category of the questions is mentioned in the first column on the left. The questionnaire's questions are recorded in the second column, while the third, fourth and fifth columns show the number of responses chosen by teachers. The fifth column shows the correct answer to each question. The researcher presented a justification for the correct answers in the analysis of the questionnaire following the tables.

**Table A:** Questions and answers of the four Arabic teachers

Category of question	Questionnaire Questions	True	False	Do not know	Correct Answer
Characteristics of dyslexia	- Dyslexia is a learning disorder characterized by difficulty reading and writing due to difficulties detecting speech sounds.	4	0	0	True
	- A child who has dyslexia and is having difficulties learning English will have the same difficulty learning any other language.	3	1	0	False
	- A low IQ score is an indicator of dyslexia	3	1	0	False
	- Dyslexia is caused by a genetic mutation.	2	1	1	True
	- Dyslexia can be cured and gone forever	3	1	0	False
Symptoms of Dyslexia	- Short memory is a symptom of dyslexia	2	1	1	True
	- A child with dyslexia can never misspell a word that he already memorized well.	2	1	1	False
	- Changing the order of letters in a word is one of the Dyslexia symptoms	4	1	0	True

	- Children with dyslexia tend to avoid public reading	4	0	0	True
	- Dyslexia makes it difficult to understand maps.	1	2	1	True
Teaching strategies	- Using a variety of font types and sizes on a page can assist children with dyslexia focus.	4	0	0	False
	- Educating children with dyslexia with a multisensory method (seeing, hearing, touching, tasting, and smelling) can help them improve their spelling skills	4	0	0	True

**Table B:** Questions and answers of the five English teachers

Category of question	Questionnaire Questions	Number of teachers who chose (True)	Number of teachers who chose (False)	Number of teachers who chose (Do not know)	Correct Answer
Characteristics of Dyslexia	(1) Dyslexia is a learning disorder characterized by difficulty reading and writing due to difficulties detecting speech sounds.	3	1	1	True

	(2) A child who has dyslexia and is having difficulties learning English will have the same difficulty learning any other language.	3	2	0	False
	(3) A low IQ score is an indicator of dyslexia	0	5	0	False
	(4) Dyslexia is caused by a genetic mutation.	4	1	0	True
	(5) Dyslexia can be cured and gone forever	0	3	2	False
Symptoms of Dyslexia	(6) Short memory is a symptom of dyslexia	1	3	1	True
	(7) A child with dyslexia can never misspell a word that he already memorized well.	1	3	1	False
	(8) Changing the order of letters in a word is one of the Dyslexia symptoms	5	0	0	True
	(9) Children with dyslexia tend to avoid public reading	5	0	0	True

	(10) Dyslexia makes it difficult to understand maps.	2	2	1	True
Teaching Strategies	(11) Using a variety of font types and sizes on a page can assist children with dyslexia focus.	3	0	2	False
	(12) Educating children with dyslexia with a multisensory method (seeing, hearing, touching, tasting, and smelling) can help them improve their spelling skills	4	0	1	True

#### 4.3.1 Analysis of Data provided in the Questionnaire

By analyzing the teachers' answers to the questionnaire questions, the below points were noticed:

In the *first question*, the researcher used the Diagnostic and Statistical Manual (DSM-5) definition of dyslexia to see how familiar language teachers are with the term "dyslexia". The majority of the language teachers heard the word dyslexia, understood it and are aware of its definition. The questionnaire showed that the question about dyslexia definition was properly answered by 100% of Arabic teachers and 60% of English teachers.

The *second question* showed that 75% of the Arabic teachers and 60% of the English teachers believed that if a child showed dyslexia symptoms while learning one language, he or she will -by default- struggle with learning any other language. This is one of the common myths about dyslexia. A child who struggles with learning a language is usually stigmatized to be struggling with reading any other language. Many studies have shown that dyslexia is a language-based disorder with phonological processing impairments as the fundamental underlying weakness (Peterson & Pennington 2012). Commonly, a child faces challenges in decoding certain alphabets while other alphabets are not so hard for him to learn. Teachers' stigmatizing and labelling actions may hinder the child's ability to learn.

The *third question* is about the relation between a low IQ and having dyslexia. Answers showed that 75% of the Arabic teachers and 100% of the English teachers believed that there is no relation between a low score on an IQ test and being diagnosed with dyslexia. According to the International dyslexia association, Dyslexia is not caused by a lack of intelligence (Low IQ) or unwillingness to learn; students with dyslexia can learn successfully with the right teaching methods (Interdys 2012).

*The fourth question* is about the commonly known cause of dyslexia. 50% of the Arabic teachers and 80% of the English teachers believed that dyslexia is caused by a genetic mutation. It should come as no surprise that learning disorders have genetic origins. The observation that dyslexia clusters in families are almost as old as the condition itself, and it's been proven several times in case reports and official family studies. Following the discovery of developmental dyslexia at the end of the last century, several stories of genetic basis emerged, one of which documented a family with three generations affected (Pennington 1995).

*The fifth question* was about the curability of the dyslexia disorder. According to the International dyslexia association, dyslexia is a lifelong disorder that cannot be fully treated. However, using the right teaching strategies can help children learn better and overcome the challenges caused by the condition (Interdys 2012). The answers of the teachers showed that all the English teachers believed that dyslexia cannot be treated while 75% of the Arabic teachers thought it could be treated. This percentage may be an indicator of the abundance of resources published in English on this topic while the Arabic resources are still rare.

*The sixth question* measured the understanding of the relevance between short memory and dyslexia. It seemed to be confusing for the majority of language teachers in this school. Only 50 % of the Arabic teachers and 25% of the English teachers believed there is a relation between short memory and having dyslexia. Dyslexia is all about recognizing the letter and remembering its sound to decode it. So, memory plays a vital role in this. Retrieving information especially phonological knowledge is a big challenge for children with dyslexia. Clinically, difficulties in word-finding are common. Experimental studies involving both rapid identifying and object naming tasks have revealed deficits in children who have dyslexia (Snowling 1998).

The *seventh question* revealed that the majority of teachers were aware that a dyslexic student can misspell a word that he had previously memorized well. According to the percentages, 50% of Arabic teachers and 60% of English teachers believe it is likely that a child with dyslexia makes a mistake with spelling a word he knows well. Children with dyslexia have trouble retrieving phonological content from long-term memory. Clinically, word-finding challenges are common, and experimental studies employing both rapid name and object naming tasks have revealed deficits (Snowling 1998).

The *eighth question* dealt with rearranging letters in a word. According to the responses, all of the teachers were aware that changing the sequence of letters in a word is a common indication of dyslexia. 100 % of the Arabic teachers and the English teachers confirmed that a child with dyslexia can change the order of the letters in a word. According to (Bogdanowicz 2006) flipping letters, mirroring letters, substituting or changing the order of letters in words are all symptoms of dyslexia. According to the British Dyslexia Association, one of the dyslexia symptoms is making word anagrams, such as tired for tried and bread for beard (BDA, 2018).

With a similar result to the eighth question, the *ninth question* got the same answer from all teachers. 100% of both Arabic and English teachers confirmed that children with dyslexia avoid public reading. This is a true observation Many students acquire social and emotional problems as a result of their school experiences, such as low self-esteem, frustration, helplessness, and depression (Wadlington & Wadlington 2005). Consequently, they prefer not to read in public. The low self-esteem of those children returns to comparisons made by teachers between them and their peers, feeling stupid or lazy, and the negative influence of peers (Glazzard 2010).



The *tenth question* aimed at checking if the teachers know that dyslexia can affect skills other than reading and writing such as understanding maps. Dyslexia causes difficulty with following directions (Altamimi 2016). The relation between having dyslexia and understanding maps seemed to be unclear to the teachers. Only 25% of the Arabic teachers and 40% of the English teachers said yes maps are difficult for children with dyslexia.

The *eleventh question* asked the teachers about the impact of using different font types and sizes on the same page on children's reading performance. The responses of the teachers showed a clear misconception about using fonts to help students with dyslexia read better. A percentage of 100% of the Arabic teachers and 60% of the English teachers confirmed that using different fonts, sizes, and colours on a page can help students with dyslexia focus. This is totally untrue. Studies showed that many fonts, colours and sizes on one page can cause what is called "Visual crowding". It negatively affects the concentration of students with dyslexia while reading. It was noticed that using the same font size with bigger line spacing helps students diagnosed with dyslexia make fewer reading mistakes (Duranovic, Senka & Babic-Gavric 2018).

The *twelfth* and last question in the questionnaire focused on the impact of using a multi-sensory approach in teaching children with dyslexia. 100 % of the Arabic teachers and 80% of English teachers answered yes it helps children learn better. This is correct as many studies proved that changing between teaching approaches helps children be more involved in the learning process. Multisensory techniques comprising the use of visual, hearing, kinesthetic, and tactile strategies are thought to be crucial for children with dyslexia, and they are also beneficial for all children and include aspects of good teaching. However, there are numerous specific training programs for children with dyslexia that are based on these approaches, as well as a better knowledge of the kind of difficulties that children with dyslexia face (Reid 2016).

#### **4.4 Analysing the school's inclusion policy and its relevance to the country's policy of inclusion:**

One of the most important yet difficult procedures in managing any project or organization is policy formulation. It should be built on knowledge and science, and have a distinct vision. To describe the meaning of a policy, many definitions have been proposed. In 2012, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) defined a policy as "a single or combination of decisions that may set out directions for guiding future decisions, initiating or delaying action, or guiding the implementation of earlier decisions, whether explicit or implicitly" (UNESCO, 2012). In this section, the researcher evaluated the school's inclusion policy (See Appendix VI) based on the relevant guidelines mentioned in the "index for inclusion" by Booth and Ainscow (2006). The researcher provided answers for the below five questions of the index in addition to highlighting the relevance of the school's inclusion policy to the UAE inclusion policy.

*A. Are children who were primarily situated in separate "special" settings who attend part-time encouraged to attend full-time?*

The school's inclusion policy described two settings for children with special educational needs "Partial inclusion" and "Full inclusion". Children with Partial inclusion SEND pupils will be enrolled in the mainstream during the sessions of Islamic Studies, Social Studies, and Activities (PE/Art) under the supervision of the SEND department. Children of full inclusion will be enrolled in the mainstream setting in all courses and they will receive extra support sessions and accommodations as recommended by the inclusion team. The policy also clarified the possibility for children who attend the "Easy learning Classes" to be transferred to an inclusion setting. A meeting is done with the parents to discuss their child's

readiness to be included. The inclusion team do this movement based on an academic, behavioural and observational plan to encourage the child to adjust to the new environment.

*B. Is there an effort to keep children from withdrawing from the setting's major activities?*

It is known that children with dyslexia withdrew from public events where they may need to read aloud. The policy did not clarify how the school can help children develop self-confidence and how they can be included in big activities without causing them any harm. However, the school counsellor clarified the role of the school psychiatrist in enhancing the students' self-perception but it is not clearly stated in the policy.

*C. Are children classified as "having exceptional educational needs" recognized as individuals with diverse interests, knowledge, and talents, rather than as a group?*

The policy presented a definition for students with special needs as “Students who have educational needs that are different from those of the majority of students. They include those who need additional support or challenge in their learning”. The definition put all of them in one category and defined those children based on their disabilities rather than their potentials and differences.

*D. Does the school refer to its support coordinator as a 'play and learning support' or 'inclusion' coordinator rather than a SENCO (special educational needs coordinator)?*

The school's inclusion policy referred to the support teachers as “Special Education Teachers” and referred to the support coordinator as LSAs “Learning Support Assistants”. Such titles should be replaced with more sensitive descriptions of the function.

*E. Does the inclusion policy match the local education authority guidelines?*

The school's inclusion policy reflected the same categories of educational needs described by the national policy. In addition, it was mentioned that the policy was developed based on Dubai Inclusive Education Policy Framework” and in accordance with the federal law (29/2006) amended in the federal law (14/2009) and Dubai law no (2/2014).

The national directions of the government represent legal guidance to schools. This legal guidance is supported by the government's procedures and requirements (Booth et al, 2005). The *UAE National Policy to Empower People of Determination's* main directive is to transform the medical model of an individual with a disability into a social model where he/she is a citizen who has rights and duties. This concept takes shape in terms of describing a person with a disability as a “member of the community” not a “patient” and his disability is not his own problem but a problem of the whole community. Based on that, this individual has rights instead not just a person eligible charity and should not be excluded on any level. This policy granted people of determination the right to take decisions and to be a part of the selection process. To overcome the barriers to inclusion; policies need to be modified. Schools' inclusion policies should be aligned with the national policy for people of determination and reflect its objectives.

The national policy to empower people of determination has four objectives which are: 1) to achieve social inclusion, 2) to guarantee the active participation of people of determination, 3) to enhance equal opportunities and 4) to support individuals and their families do their role (Ministry of Community Development 2017).

The policy has six main pillars. Since the scope of the study is related to Inclusive Education practices, the Second pillar “Education” will only be discussed (See Appendix 4).

The education pillar in the policy has two main goals which are recommended to be achieved through some initiatives:

Goal 1) *Improving Educational Inclusion (public, vocational and higher education)*: it can be achieved through designing a clear program that responds to the needs of people with determination. The needed resources, technologies and tools should be available in schools. Treatment support services such as speech, behavioural and functional and behavioural should also be available. In addition, awareness campaigns and community engagements should be encouraged. Moreover, home schooling program should be an available option for certain disabilities.

Goal 2) *Providing highly qualified teachers and experts in education for people of determination across different learning stages*: the recommended initiatives to achieve this goal are establishing specializations in universities for people of determination, introducing the principles of teaching and assessing students with special needs to teachers in the pre-service stage and introducing training programs for those working in the field.

#### **4.5 Investigating the provisions offered to children with dyslexia in school.**

According to the General Rules for the Provisions of Special Education Programs and Services specified by the “School for all” initiative, some reasons are acceptable for the placement of a child in a special education classroom and some reasons are not acceptable for the placement of a child in a Special Education classroom (United Arab Emirates Ministry of Education Special Education Dept. 2010). If the student has a significant disability and would not benefit from conventional schooling in a classroom setting, it is an acceptable reason to be taught in a special classroom setting. Moreover, if a high number of kids enrolled in the school with a comparable handicap, such as deafness or hearing impairment, who would benefit from education and social contact in a special education classroom is another acceptable reason for teaching a student in a special classroom. The cases that are not acceptable for a school to be teaching students in special classroom setting are as follows:

- The student is experiencing learning difficulties that are not related to a specific learning disability.
- The student has a minor disability that has no major and negative impact on his academic performance.
- Student is considerably older than his peers in the general education classroom.
- The student has a few minor behavioural or emotional issues.

Given that dyslexia is classified as Specific Learning Disability by the (DSM5), it is not acceptable to find a child with dyslexia who is excluded from the regular classroom. The American Dyslexia Association differentiated between modifications and accommodations based on the purpose of each (David & Amey 2020) as follows:

*Accommodations* do not change the content of the subject of education, offer students an unfair benefit, or alter the abilities or knowledge measured by a test.

Students with dyslexia can display their learning without really being restricted by their difficulties thanks to accommodations. Appropriate accommodations should be made as part of the routine process of classroom instruction, not just during assessment periods. Classroom accommodations allow students to fully participate in classroom instruction and learn and demonstrate what they have learned.

*Modifications* made to curriculum content, worksheets, or exams impact the nature of instruction and evaluations, as well as what students are expected to learn. But they also provide opportunities for interaction with other students in the classroom and at school.

The below table shows the list of provisions offered to students with dyslexia in the school based on the data provided in the school inclusion policy and the interviews’ responses. Due to the health and safety regulations in Dubai, the researcher could not make class observations to make sure that all the provisions are properly used. The four categories of provisions are suggested by the American Dyslexia Association (David & Amey 2020). By looking at the offered provisions to children with dyslexia, it is noticed the shortage of “assistive technology” as a support tool. Children. Audio books are available only inside the library while providing ‘text to speech’ software inside the class could be of great help. In addition to using computer-based assessments.

**Table C:** Provisions available in the school

<b>Category</b>	<b>Provision</b>
<b>Presentation</b>	<ol style="list-style-type: none"> <li>1. Students are offered verbal and repetitive instruction.</li> <li>2. Receive different sheets with Fewer words per page</li> <li>3. Use of visual content such as pictures and diagrams</li> </ol>

	<ol style="list-style-type: none"> <li>4. Allowing the child to record the lesson instead of writing</li> <li>5. Availability of a helper to read the questions during exams and class tasks</li> <li>6. Modified sheets that use multiple choice questions rather than open ended questions</li> <li>7. Audio books (Allowed only inside the library)</li> </ol>
<b>Response</b>	<ol style="list-style-type: none"> <li>A. Mark answers in the test book instead of on a separate answer sheet</li> <li>B. Dictate to scribe</li> <li>C. Point to response choices</li> </ol>
<b>Setting</b>	<ol style="list-style-type: none"> <li>1. Individual or small group</li> <li>2. Reduce visual and/or auditory distractions</li> <li>3. Pull out and one to one sessions</li> </ol>
<b>Timing/Scheduling</b>	<ol style="list-style-type: none"> <li>4. Flexible scheduling based on the priority of support sessions</li> <li>5. Extra time for class activities</li> <li>6. Extra time in assessments (estimated to be 25 min)</li> </ol>



## **Chapter 5: FINDINGS, DISCUSSION AND CONCLUSION**

This chapter is divided into four sections: findings from the data analysis, a discussion of the findings and recommendations for the future, and a conclusion.

### **5.1 Findings from analysis of data:**

The researcher organized the findings based on the research questions. Each section provides information related to the research questions. The discussion of the findings in relation to the research questions is provided in the discussion and recommendations section.

#### **Research Question # 1: “How well informed is dyslexia to educators?”**

Findings from the teachers’ knowledge assessment questionnaire answered this research question. The results showed that around 60 % of the language teachers understood the nature of dyslexia as a learning difficulty (5 out of 9 teachers scored more than 50% in the assessment). However, 40 % of the language teachers scored less than 50 % on the questionnaire.

Many factors are examined in this part based on the findings from the preceding study of the teachers' responses to general questions about dyslexia. Data are organized in two forms: tables and pie charts. The two tables below summarized the percentages that every teacher scored solely in the questionnaire. The rationale for using this way of presenting data is to reach the number of teachers with below average knowledge about dyslexia. (Table 3) below summarizes the percentages that Arabic teachers scored, while (Table 4) summarizes the percentages of the scores earned by English teachers.

Following the two tables, two pie charts are demonstrated. The pie charts are used to illustrate the percentage of teachers with above average knowledge compared to teachers with

below average knowledge about dyslexia. This method of organizing data gave an overall picture of the current situation of awareness of dyslexia that language teachers have and the importance of training courses provided to language teachers.

**Table D:** The Percentage of correct answers scored by each Arabic teacher

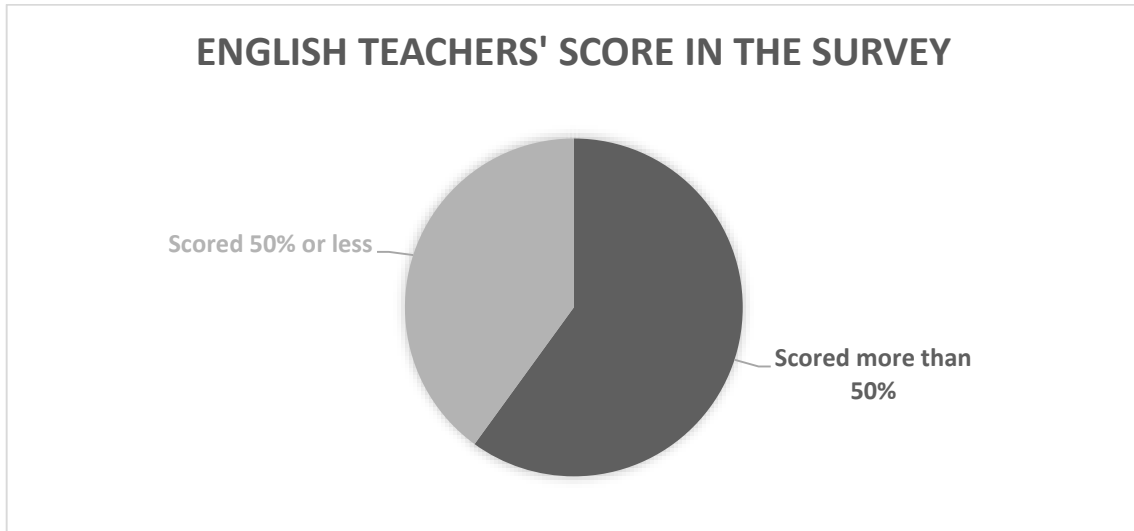
<b>Teacher</b>	<b>Percentage of correct answers</b>
<b>Arabic teacher 1</b>	58%
<b>Arabic teacher 2</b>	42%
<b>Arabic teacher 3</b>	83%
<b>Arabic teacher 4</b>	50%

**Table E:** The Percentage of correct answers scored by each English teacher

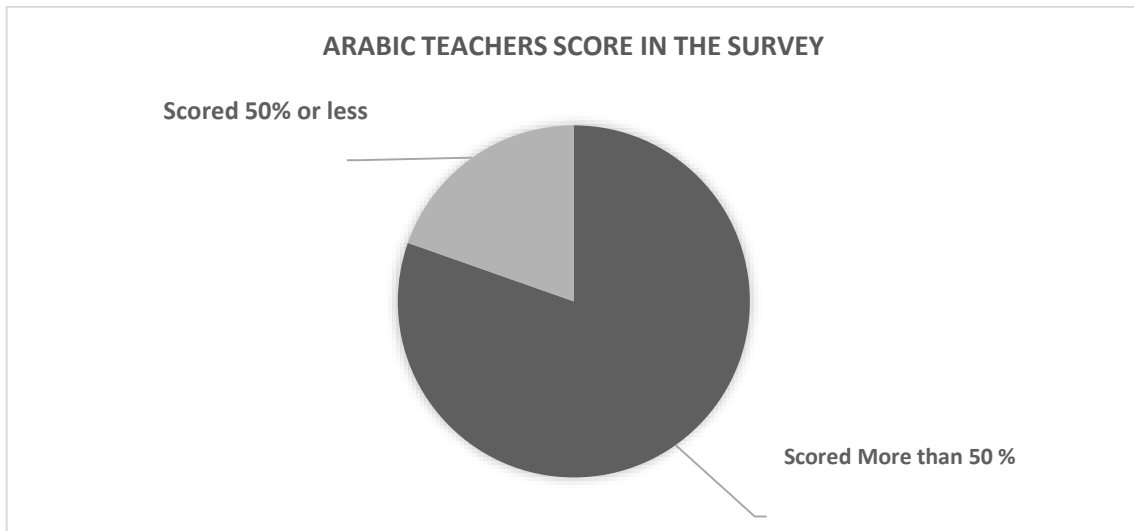
<b>Teacher</b>	<b>Percentage of correct answers</b>
<b>English teacher 1</b>	42%
<b>English teacher 2</b>	67%
<b>English teacher 3</b>	67%
<b>English teacher 4</b>	75%
<b>English teacher 5</b>	42%

The previous study was designed to assess language teachers' understanding of dyslexia as a learning difficulty. The data in the pie chart below was gathered by the researcher to demonstrate the percentage of teachers who answered more than 50% of the questions correctly versus those who answered 50% or less of the questions incorrectly.

**Figure 2:** English teachers' score



**Figure 3:** Arabic teachers' score



According to the previous illustrations, the majority of teachers have an above-average understanding of dyslexia. This demonstrates that teachers are aware of dyslexia and have access to useful information. The number of teachers who answered less than half of the questions incorrectly, on the other hand, cannot be neglected. A lack of specific information can be harmful. As noticed above the majority of teachers thought that using a combination of font styles, sizes and colours on the page can help students with dyslexia although the opposite

is the correct way. Such misconception can result in a lower performance in reading text that has a variety of styles and sizes. Another misconception that was found in the study is that children who have difficulty in learning a language will have the same difficulty in learning any other language.

**Research Question # 2:** “Are schools ready to meet the needs of children diagnosed with dyslexia? Or do systems need improvement?”

Data from the analysis of Identification and Assessment methods, the school inclusion policy analysis, and teachers' expertise were all integrated to provide findings relevant to this question.

**1. In terms of teachers and staff**

Language teachers had the basic information about dyslexia. Development plans for educating children about special needs are made annually as per the inclusion policy. This practice helps the staff to understand the different needs and abilities of students. However, it was noticed that the school had a shortage of staff. The KHDA recommended that the inclusion champion be a dedicated employee to supervise the inclusion practices in the school while the inclusion champion in this school was found to be occupying the function of vice principal. In addition, there were no Learning Support Assistants hired to help struggling students inside the classes. The teacher assistant function that existed in the school was limited to supporting children with personal needs, not academic needs.

**2. Screening and identification of dyslexia:**

*“We have a clear program for early identification”* declared the school counsellor.

In terms of screening and Identification of dyslexia, it was noticed that the school has three clear procedures to follow to identify dyslexia. The three processes guaranteed that no

child will be left undiagnosed. The processes were made clear to school staff so that the teachers are asked to provide inputs concerning certain skills that children show in class. The admissions team are also aware of what to look at and what to ask the parents about to identify any literacy difficulties. And finally, the inclusion team follow a clear strategy for defining the needs of children who may show any low academic performance.

*“There is a shortage in the available assessments for dyslexia in Arabic.” Said the school counsellor*

The school counsellor declared in the interview that most of the available tests for measuring dyslexia are in English. When a child shows academic delay in Arabic subject, the school does not have the suitable tools for diagnosis.

### **3. In terms of the inclusion policy**

The analysis of the current inclusion policy indicated that the school inclusion policy is clear. The role of each member of the inclusion team and categories of special needs were obviously mentioned in the policy. The policy also indicated the readiness of the school to include any child who is ready to move from the special class setting to a mainstream setting. The inclusion policy lacked information about the available provisions for children with specific learning disabilities.

### **4. Challenges facing the school to educate children with dyslexia:**

As indicated by the school counsellor *“many challenges face the school during the screening and identification phase. One of these challenges is the parents’ denial of the case of their child”*. Speaking about dyslexia, it takes a huge effort from the school to convince the

parents that their child has dyslexia. Parents tend to accuse the language teacher of not exerting enough effort to educate their child especially if the student is doing good in another language. This is one of the common challenges in dealing with dyslexia. Parents tend to believe that if the child managed to read and write one alphabet then he can do the same with any other language. Based on that belief, parents may refuse the school's intervention program and start private work with their children outside the school.

**Research Question # 3:** "What are the provisions that should be offered to those children? What could be done to support the development of such learners?"

The findings clarified that children with dyslexia have access to some provisions in the school. Extra support sessions, class accommodations and assessment modifications are examples of provisions that are offered to them. No evidence of providing different forms of assistive technology was demonstrated. By looking at the literature review, many provisions that may help students with dyslexia were suggested such as access to speech to text technology that can be used in the assessment. In addition to providing books that are written in dyslexia friendly font. Also, no evidence was found for using different materials to activate the five senses of the child in the learning process.

## 5.2 Discussion

This study aimed at investigating schools' actual inclusive practices for serving students with dyslexia in a mainstream context. In light of the findings from the analysis of the case study offered in the research, an indication of the quality of the service is provided. This case study is only one example, and the result produced in this section is not meant to be generalized; rather, it is meant to serve as a reminder or eye-opener to decision-makers on how to better include those children.

Concerning the screening process, Reid (2012) clarified that Dyslexia should not be diagnosed just through testing. Assessment for dyslexia is a procedure that entails much more than just administering a test. The assessment must take into account classroom and curricular factors, as well as the child's individual difficulties and talents. Assessment should specifically evaluate three aspects: challenges, discrepancies, and differences, all of which should be related to the classroom environment and curriculum.

The American dyslexia association indicated some general steps for schools to follow for diagnosing children with dyslexia. The school needs first to track a child's development with a brief screening test before recommending the student for a complete evaluation to see whether the child is performing at a "benchmark" level that predicts reading achievement. If a student falls below that limit (approximately 40th percentile in the USA), the school may provide intensive and individualized supplemental reading instruction before determining whether the student requires a comprehensive evaluation that would result in a special education eligibility designation. To get back on track, some children just require a more structured and systematic education; they do not have learning difficulties (Interdys 2012). The process of screening followed by the school in the case study assumed that low academic performance is enough justification for performing diagnostic tests. The results of the test can

be misleading if the school skipped the chance that the student may just need to receive more structured supplemental sessions. Consequently, it is early to make such a judgment and communicate the result to the parents before giving different chances for the child to catch up with the educational outcomes.

Labels must not be used excessively, therefore the term "dyslexia" is usually adopted only after a lengthy examination process is followed. A label usually comes with a set of expectations. These could be related to a more informed resource selection or a different set of parental and teacher expectations. While a label can be beneficial, it can also be disadvantageous, leading to a belief that dyslexia can only be treated by "experts" (Reid 2012). Teachers' expectations can be described as evaluations of individual students' academic capabilities. Stereotyped teacher opinions of students can influence how teachers engage with their students, as well as the curricular and instructional possibilities available to them, which can affect students' academic progress (Hornstra et al. 2010). Proper training and awareness sessions should be provided to teachers and parents to ensure a full understanding of dyslexia as a challenge to everybody not only to the teacher. To guarantee the full inclusion of children with dyslexia, ongoing learning support should be available to them inside the class. The role of the teacher assistant or the so-called learning support assistant is important. It was noticed that the school lacks this role. The availability of an assistant teacher inside the class can enhance the learning process as he/she provides the needed adult support to children. This option increases the one to one instructional time, exchanging different and new ideas with children and increases the observation time (Rinehart n.d.)

It was clear that the assessments used in the school are not enough to have a proper diagnosis for children who show difficulties in learning the Arabic language. This is seemingly due to the lack of research about dyslexia in the Arab world. This shortage in assessments of



Dyslexia in Arabic indicates that some children may be struggling alone in learning Arabic left behind. If the school follows the internationally developed assessments for dyslexia, children will be mistakenly judged based on their performance in English and the difficulty they have will remain undiscovered.

The current inclusion policy focused on the disabilities, not the abilities that the children have. The word inclusion should represent all the differences that appear in any child including skills and areas of improvement. It is suggested that the policy be improved and modified to better serve children with specific learning disabilities. Creative solutions, new approaches to inclusion, and access to specialized technology should all be mentioned in the inclusion policy. In addition, psychological services should be mentioned in the school inclusion policy as a main right to all children in general and children with special needs in specific.

Academic support offered to children with dyslexia was noticed to happen in pull out sessions. This means that the education setting offered to children with dyslexia is not fully inclusive. Moreover, it negatively affects their participation in school activities because the pull out sessions usually occur during activities sessions. Coordination between subject teachers and SENCO should be made to guarantee that the required support to those children happens inside the classroom.

### **5.3 Conclusion**

Three scenarios for screening against dyslexia among primary school years children emerged in the study. The three different scenarios ensured that all children would be evaluated in such a way that makes sure they are not facing any learning difficulties and their academic performance is always monitored. Regarding the assessments used for the identification of

dyslexia, there is a considerable need to have a unified list of assessments approved by the education authority to maintain unified standards for measuring children's abilities across the country. The staffing also revealed a lack of highly qualified teachers to deal with dyslexia as a learning difficulty in the regular class context. It also revealed that the school is understaffed as some employees are fulfilling more than one school role at the same time while some jobs are not even occupied. It was noticed that the inclusion team believed that the education of children with learning difficulties is better made in an individualized setting. This should be communicated clearly that the academic support offered to children with dyslexia should happen inside their classes, not in pull out sessions. Dyslexia has no relation to IQ which means that students with dyslexia can show good academic performance if the needed accommodations are properly offered to them in class. The authorities in the UAE paid attention to students with Special Learning Disabilities as part of its inclusive education policy and there is a moderate level of awareness of dyslexia. Schools need to work accordingly and provide better support systems to those children to best educate them in a regular class and to discover their abilities and talents.

Overall, dyslexia seems to be well seen by the authorities in the UAE and it is on their list of priorities. Awareness programs should be launched to educate the community about dyslexia and professional training courses with the latest techniques for educating children with dyslexia should be offered to teaching staff to guarantee that children with dyslexia are not suffering alone. Clear rules need to be developed to guarantee the right of students with dyslexia receive all the services they need inside their class without being pulled off their rooms.

## **5.4 Recommendations and Future Directions:**

Based on the results of this study, some actions are recommended to be taken in the future. First, further research on dyslexia in Arab countries is needed as well as research on statistics on specific learning disabilities in the middle east. Second, more attention should be paid to using assistive technology in educating children with specific learning needs in an inclusive context. Third, tools for screening for dyslexia should be provided and supervised by the regulator to keep records of the numbers of diagnosed children in the country and to make sure that schools are aware of the cases that exist in their classrooms. Fourth, developing assessment tools that can detect dyslexia in Arabic is significant since most of the available tools measure dyslexia in English.

## References

- Ainscow, M., Booth, T. and Dyson, A., 2006. *Improving schools, developing inclusion*. Routledge.
- Arif, M. & Gaad, E. (2008) 'Special needs education in the UAE: a system perspective', *Journal of Research in Special Educational Needs*, 8 (2), 111–117.
- Ainscow, M. & Sandill, A. (2010). Developing inclusive education systems: The role of organisational cultures and leadership. *International Journal of Inclusive Education*, vol. 14(4), pp. 401–416.
- Al-ghizzi, T. M. (2015). Dyslexia in the Arab World. *International Journal of Language and Literature*, vol. 3(2).
- Alsobhi, A. Y., Khan, N. & Rahanu, H. (2015). Personalised learning materials based on dyslexia types: Ontological approach. *Procedia Computer Science*. Elsevier Masson SAS, vol. 60(1), pp. 113–121.
- Altamimi, R. (2016). Understanding dyslexia implications of the identification of, and support for, children with dyslexia in kuwaiti primary schools. *PQDT - UK & Ireland* [online]. Available at: [https://search.proquest.com/dissertations-theses/understanding-dyslexia-implications/docview/1999216769/se-2?accountid=10673%0Ahttps://ed-primo.hosted.exlibrisgroup.com/openurl/44UOE/44UOE\\_VU2??url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:disserta](https://search.proquest.com/dissertations-theses/understanding-dyslexia-implications/docview/1999216769/se-2?accountid=10673%0Ahttps://ed-primo.hosted.exlibrisgroup.com/openurl/44UOE/44UOE_VU2??url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:disserta).
- Badr, H. M. (2019). Exploring uae teachers' attitude towards the successful implementation of the general rules in the 'school for all' initiative. *Journal of Language Teaching and Research*, vol. 10(1), pp. 92–102.

del Barrio, V. (2004). *Diagnostic and Statistical Manual of Mental Disorders. Encyclopedia of Applied Psychology, Three-Volume Set.*

Benkohila, N. (2018). Teachers' Perceptions about Dyslexia and Intervention with Students at Risk of Dyslexia in the United Arab Emirates (UAE) Schools عسر القراءة والتدخل لدى الطالب ت ا , (August). دولة القراءة في مدارس المعرضين لخطر عسر صورات المعلمين عن

Bishop, D. V. M., Nation, K. & Patterson, K. (2014). When words fail us: Insights into language processing from developmental and acquired disorders. *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 369(1634).

Bock, S. M. (2015). The Inclusion of special educational needs (SEN) students in United Arab Emirates (UAE) Mainstream Schools: An Exploratory Study, (June).

Bogdanowicz, K. (2006). Y OUNG L EARNERS A short introduction to, vol. 2(36), pp. 22–28.

Bryant, P. & Impey, L. (1986). The similarities between normal readers and developmental and acquired dyslexics. *Cognition*, vol. 24(1–2), pp. 121–137.

David, M. E. & Amey, M. J. (2020). Accommodations for Students With Disabilities. *The SAGE Encyclopedia of Higher Education*, pp. 1–5.

Duranovic, M., Senka, S. & Babic-Gavric, B. (2018). Influence of increased letter spacing and font type on the reading ability of dyslexic children. *Annals of Dyslexia. Annals of Dyslexia.*

Education, M. O. F. (2020). Effective Provisions of Educational Services for Native Arabic Learners with dyslexia at a Private School in Northern Emirates in the UAE A case-study يف ةءارقلا رسع يوذ ةببير علا ةغللا يثدحتمل لاعفلا معدلاو ةيميلعتلا تامدخلا ةدحتملا ةببير علا تاراملا ةلود ي (March).

Elbeheri, G., Everatt, J., Reid, G. & Mannai, H. al. (2006). Dyslexia assessment in Arabic.

*Journal of Research in Special Educational Needs*, vol. 6(3), pp. 143–152.

Elliott, J. (2014). The dyslexia debate: some key myths. *Learning Difficulties Australia*, vol. 46(2) [online]. Available at: [www.ldaustralia.org](http://www.ldaustralia.org).

Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, vol. 5(1), p. 1.

Funnell, E. (1983). Phonological processes in reading: New evidence from acquired dyslexia. *British Journal of Psychology*, vol. 74(2), pp. 159–180.

Gharaibeh, M. (2021). Predicting dyslexia in Arabic-speaking children: Developing instruments and estimating their psychometric indices. *Dyslexia*, vol. 27(4), pp. 436–451.

Glazzard, J. (2010). The impact of dyslexia on pupils' self-esteem. *Support for Learning*, vol. 25(2), pp. 63–69.

Gonzalez, M. & Brown, T. B. H. (2019). Early Childhood Educators' Perceptions of Dyslexia and Ability to Identify Students At-Risk. *Journal of Education and Learning*, vol. 8(3), p. 1.

Goswami, U. (2000). Phonological Representations, Reading Development and Dyslexia: Towards a Cross-Linguistic Theoretical Framework. *Dyslexia*, vol. 6(2), pp. 133–151.

Habib, M. & Giraud, K. (2013). Dyslexia. *Handbook of Clinical Neurology*, vol. 111, pp. 229–235.

Hopper, B. & Hurry, P. (2000). Learning the MI way: The effects on students' learning of using the theory of multiple intelligences. *Pastoral Care in Education*, vol. 18(4), pp. 26–32.

Hornstra, L., Denessen, E., Bakker, J., van den Bergh, L. & Voeten, M. (2010). Teacher Attitudes Toward Dyslexia: Effects on Teacher Expectations and the Academic Achievement of Students with Dyslexia. *Journal of Learning Disabilities*, vol. 43(6), pp. 515–529.

Interdys. (2012). Dyslexia Basics. *Fact Sheets from Interdys*, p. 3.

Jabareen, Y. (2009). Building a conceptual framework. Philosophy, definition, procedure. *International Journal of Qualitative Methods*, vol. 8(4), pp. 49–62.

Kearns, D. M., Hancock, R., Hoeft, F., Pugh, K. R. & Frost, S. J. (2019). The Neurobiology of Dyslexia. *Teaching Exceptional Children*, vol. 51(3), pp. 175–188.

Lieberman, A. (2018). *Improving Schools. Teaching, Learning and Living*.

Lyon, G. R., Sl, B. a, Catts, H., Dickman, E., Eden, G., Fletcher, J., Gilger, J., Morris, R., Tomey, H. & Viall, T. (2003). Defining Dyslexia , Comorbidity , Teachers ' Knowledge of Language and Reading A Definition of Dyslexia. *Annals of Dyslexia*, vol. 53(1), pp. 1–14 [online]. Available at: <http://www.hku.hk/linguist/cou/adv/ling6022/articles/lyon2003.pdf>.

Lyons, G. & Arthur-kelly, M. (2014). Lyons paper 2014 unesco inclusion and ed of PMLD 4CE\_2014042811540527, (April), pp. 445–456.

Ministry of Community Development. (2017). National Policy to empower People of Determination [online]. Available at: <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/the-national-policy-for-empowering-people-with-special-needs>.

Norton, E. S., Beach, S. D. & Gabrieli, J. D. E. (2015). Neurobiology of dyslexia. *Current Opinion in Neurobiology*. Elsevier Ltd, vol. 30, pp. 73–78.

O'Connor, E. A. & Yasik, A. E. (2007). Using information from an early intervention program to enhance literacy goals on the Individualized Education Program (IEP). *Reading Psychology*, vol. 28(2), pp. 133–148.

Pennington, B. F. (1995). Genetics of Learning Disabilities. *Journal of Child Neurology*, vol. 10, pp. 69–77.

Peterson, R. L. & Pennington, B. F. (2012). Developmental dyslexia. *The Lancet*. Elsevier Ltd, vol. 379(9830), pp. 1997–2007.

Reid, G. (n.d.). and.

Rello, L. & Baeza-Yates, R. (2013). Good fonts for dyslexia. *Proceedings of the 15th International ACM SIGACCESS Conference on Computers and Accessibility, ASSETS 2013*.

Rinehart, P. (n.d.). INSTRUCTIONAL.

Schulte-Körne, G. (2010). Diagnostik und therapie der lese-rechtschreib-störung gerd schulte-körne. *Deutsches Arzteblatt*, vol. 107(41), pp. 717–727.

Shaywitz, S. E. & Shaywitz, B. A. (2005). Dyslexia (specific reading disability). *Biological Psychiatry*, vol. 57(11), pp. 1301–1309.

Smith, A. (2005). Index for Inclusion. *Kairaranga*, vol. 6(2), pp. 23–24.

Snowling, M. (1998). Dyslexia as a Phonological Deficit: Evidence and Implications. *Child Psychology and Psychiatry Review*, vol. 3(1), pp. 4–11.

Snowling, M. J. (2013). Early identification and interventions for dyslexia: A contemporary view. *Journal of Research in Special Educational Needs*, vol. 13(1), pp. 7–14.

Studies, T. (2018). Dyslexia and English : Degree of Difficulties Faced by the Students with Dyslexia while Learning English.

Sümer Dodur, H. M. & Altındağ Kumaş, Ö. (2021). Knowledge and beliefs of classroom teachers about dyslexia: the case of teachers in Turkey. *European Journal of Special Needs Education*. Routledge, vol. 36(4), pp. 593–609.

Swan, D. & Goswami, U. (1997). Picture naming deficits in developmental dyslexia: The phonological representations hypothesis. *Brain and Language*, vol. 56(3), pp. 334–353.



The Ministry of Education. (2010). The Ministry of Education Strategy 2010 – 2020 Aiming in accomplishing a score of 10 / 10 in all of its initiatives [online]. Available at:

[http://www.moe.gov.ae/English/SiteDocuments/MOE\\_Strategy.pdf](http://www.moe.gov.ae/English/SiteDocuments/MOE_Strategy.pdf).

United Arab Emirates Ministry of Education Special Education Dept. (2010). General Rules for the Provision of Special Education Programs and Services (Public & Private Schools), pp. 1–92 [online]. Available at:

<https://www.moe.gov.ae/English/SiteDocuments/Rules/SNrulesEn.pdf>.

Wadlington, E. M. & Wadlington, P. L. (2005). What Educators Really. *Reading Improvement*, vol. 42(1), pp. 16–33.

Williams, J. A. & Lynch, S. A. (2010). Dyslexia: What Teachers Need to Know. *Kappa Delta Pi Record*, vol. 46(2), pp. 66–70.

Yin, R.K., 2003. Designing case studies. *Qualitative research methods*, 5(14), pp.359-386.

## Appendix I

A semi-structured Interview With the school's Vice principal:

**The researcher:** Thank you for giving me the opportunity to make this interview for my research purpose. This is a voluntarily 15-minutes interview to collect data about the school structure and inclusion setting in the school. I assure you that all information provided in the interview will be treated as confidential and no personal details or information about the school will be published.

**The Vice principal:** It is my pleasure to help you with your research. I give you my permission to use the information in your research.

*Question 1:*

**The researcher:** Give us a brief about the school.

**The Vice principal:** Our school is a relatively old school with two branches located in Dubai. We follow the American system with some modifications to match the Emirati culture and the conservative background that respects our Islamic values. Arabic is the spoken language by the majority of our students and teaching staff. Although English is the primary language of instruction, we pay special attention to Arabic and Islamic subjects, and we excel in both. The school is divided into two sections "Boys section" and "Girls section". In the elementary stage, both boys and girls attend together in the same classes then starting in grade 4 they study in two different buildings.

*Question 2:*

**The researcher:** Describe your role in the school.

**The Vice principal:** I'm the Vice principal and the inclusion champion. As a Vice principal, my role is to deal with issues of students, staff, and school activities and to coordinate with the school

principal on the responsibilities of the school management. At the same time, I'm the inclusion champion. The "Inclusion Champion" is a title given by the KHDA to a nominated school member to be responsible for promoting inclusive ideas in the school. I'm mainly supervising all the inclusive practices in the school. According to the American system, we accept children in Pre-kg at the age of 3 and in KG1 at the age of 4. We have school grades up to Grade 12.

*Question 3:*

**The researcher:** Do you consider the school an inclusive school?

**The Vice principal:** Yes, our school is inclusive. We accept children with different abilities on all levels and we act accordingly. We never reject a child for his/her abilities or needs. The school environment is welcoming, and we respect and understand differences. We are also committed to providing professional training to our teaching staff to understand individual differences and deal with special abilities.

*Question 4:*

**The researcher:** What are the categories of special needs students that you accept in school.

**The Vice Principal:** Categories are:

- Behavioral, Social, Emotional
- Sensory
- Physical Disability
- Medical Condition or Health related Disability
- Speech and Language Disorders
- Communication and Interaction
- Assessed Syndrome

- General Learning Difficulties (LD1, LD2, PMLD)
- Specific Learning Difficulties (Dyslexia, Dysgraphia, Dyscalculia)

*Question 5:*

**The researcher:** Explain the inclusion setting in the school.

**The Vice Principal:** We have two categories for included students. One category is the severe cases who attend what we call “Easy learning classes” with a Para curriculum that suits their case. They are partially included in mainstream classes and they participate in class activities.

*Easy Learning Section (ELS)* includes Students placed in special classes according to abilities and Partial inclusion of students

The other category is the *Inclusion Section which includes SEND* students included in mainstream classes Each section is headed by a qualified SEND specialist who is supported by the Inclusive Education Action Team. Some modifications can be made to meet the needs of those students, in addition, to pull out sessions when needed. Also, in-class adaptations and assessment modifications are offered to them according to the recommendation of the inclusion team.

*Question 6:*

**The researcher:** How do you promote the culture of inclusion in the school?

**The Vice principal:** First we never reject a student due to any disabilities. Second, we arrange training programs for our teaching staff to understand how to include children with different needs in their classrooms. Third, we are always keen that students of determination take part in school events and activities. We never isolate them. Fourth, we provide all the services that children may need

inside the school including occupational therapy, language and speech services or any class accommodations they may need.

*Question 7:*

**The researcher:** What are the challenges to inclusion that you face in your school?

**The Vice principal:**

The capacity of the teachers inside the classroom. Teachers have many responsibilities and sometimes they are not capable of fulfilling all the needs as it should be.

The coordination with the KHDA regarding some cases. Sometimes the KHDA recommend the inclusion of some children in the school while their cases are severe and they may benefit more from different contexts. We still respond to their needs although to fully include them in school life needs more guidance from the KHDA.

## Appendix II

A semi-structured interview with the Head of Inclusion

**The researcher:** Thank you for giving me the opportunity to make this interview for my research purpose. This is a voluntarily 15-minutes interview to collect data about the “structure and function of the inclusion department in the school”. I assure you that all information provided in the interview will be treated as confidential and no personal details or information about the school will be published.

**The Head of inclusion:** Thank you, my pleasure to help.

*Question 1:*

**The researcher:** What is your position and responsibilities at the school?

**The Head of inclusion:** I am the Head of the Inclusion department and the SEN coordinator. I am responsible for the schedules of the special education teachers and distributing the roles between the team. I am also responsible for the development plan of the inclusion staff. In addition, I participate in the assessment and placement of students and in writing the Individualized Educational Plan IEP for the children. I am also responsible for reviewing the reports and communicating with parents.

*Question 2:*

**The researcher:** What is the structure of the inclusion department?

**The Head of inclusion:** The inclusion department is divided into two sections with two different teams which are the “SEN department” and the “Easy learning department”.

1. The SEN department fulfils the needs of children with special educational needs who are attending the regular curriculum with some modifications and adaptations. Those children attend in regular classes with a special educational plan that may include pull out sessions.
2. The Easy Learning department is responsible for educating children who are being taught a Para curriculum. The Easy learning department offers all the additional services that children may need such as occupational therapy, speech and language therapy and skills development. Those children are attending the para curriculum along with the additional services such as occupational therapy and at the same time, they are registered in regular classes where they attend the arts and activities classes.

*Question 3:*

**The researcher:** How many students with special needs are in the school? How many of them are diagnosed with dyslexia?

**The Head of Inclusion:** We have around 60 children with special needs out of which 7 children are diagnosed with dyslexia.

*Question 4:*

**The researcher:** What is the classification of dyslexia as a special need in the school?

**The Head of Inclusion:** According to the KHDA recommendation we classify the students into three categories as follows:

Tier 1: Includes children who attend in a general class setting and need mild support.

Tier 2: Includes children who receive general education but in a small group setting and need moderate support. They attend scheduled support sessions.

Tier 3: Includes children who receive special education in a special setting and need intensive support and intervention.

Dyslexia usually falls in Tier 1 and if severe could be in Tier 2.

*Question 5:*

**The researcher:** Please describe the process for referring students to the inclusion department.

**The Head of Inclusion:** We have two scenarios for this. The first scenario is when we receive a child whose parents are aware of his/her case and they have a diagnostic report. We receive the report with the recommendations, develop an IEP Individualized Educational plan, communicate with the family then follow the plan accordingly in class with an ongoing evaluation and follow up.

The second scenario is when a child shows some alarming symptoms in school such as low academic performance. The class or subject teacher observes the symptoms and takes notes with the observations then discuss them with the inclusion team. We make an internal diagnosis and then communicate it to the family. Sometimes we ask families to go for a diagnostic assessment and get a diagnostic report with medical advice and sometimes we do not according to the situation. In this case, we also develop an IEP that suits the child's needs and communicate it with the family then put the plan into action.

*Question 6:*

**The researcher:** Explain the steps of designing the intervention program to students.

**The Head of inclusion:** Usually the process is as follows:

1. The teacher identifies the students who need support and refers them to the inclusion department.
2. We make a needs assessment to determine in which tier is the child.
3. We decide with the help of the academic department "the teacher and head of subject" the intervention type, concentration and learning objectives.



4. We build a team for writing the Individualized Educational plan. The team includes the subject teacher, family, head of inclusion, school counsellor and the psychiatrist.
5. We set the goals for the student's intervention program together and determine the time frame.
6. Assign tasks and responsibilities to the team.
7. Establish a follow up and evaluation tool to monitor progress.

*Question 7:*

**The researcher:** How does an intervention program of a child who is diagnosed with dyslexia look like?

**The Head of inclusion:** Usually, children who suffer from dyslexia show remarkable low results in written assessments. From here we start our support to the student by defining the skills that need development. We explain to the teacher more information about dyslexia and how he/she can help the student in class. In parallel, our Sen Teachers take the student in pull out sessions to work intensively on improving the related skills such as memory and phonological awareness. In addition, our school psychiatrists work closely with the child as we are aware of the low self-confidence and feeling of shame that those children may have. The psychiatrist explains to the child about the case and work on a planned basis to improve his/her self-esteem.

## Appendix III

A semi-structured interview with the “School counsellor”

**The researcher:** Thank you for giving me the opportunity to make this interview for my research purpose. This is a voluntarily 15-minutes interview to collect data about the “Screening and Identification of children with dyslexia in school”. I assure you that all information provided in the interview will be treated as confidential and no personal details or information about the school will be published.

**The Head of inclusion:** Sure, anytime.

*Question 1:*

**The researcher:** Please mention your job title and job role.

**The school counsellor:** My job title is Social Counselor. My job description is different as I’m responsible for some coordination tasks such as teachers’ training and awareness in addition to assessments in coordination with the psychiatrist. I also get involved in designing the intervention programs and school reports.

*Question 2:*

**The researcher:** What procedure do you take if a teacher informs you that a student is academically falling behind?

**The school counsellor:** We follow certain procedures which are:

First, we consult the subject head, who is in charge of keeping track of each child's academic progress. We must ensure that this delay is not a one-time occurrence for one or two examinations, but rather a consistent occurrence.

Second, we provide the teacher with a checklist that measures different skills and abilities and the teacher should mark the areas where he notices a delay.

Third, an IQ test is made to measure the intellectual abilities of the student.

Fourth, we make an internal diagnostic assessment for the child to decide the case and the needs.

Fifth, we meet with the family to communicate the findings and our recommendations (this is the hardest step as we usually get blamed for the performance of the child and families refuse the diagnosis).

Finally: We decide on the intervention program and design the IEP.

*Question 3:*

**The researcher:** What are the procedures that the school takes to early identify Dyslexia in students who have not been diagnosed yet?

**The school counsellor:** We have a clear program for early identification. At the beginning of every school year, we make a training program for the subject teacher in which we identify the different learning difficulties that they may see in children. After two weeks from the start of the academic year, teachers are given a checklist with a scale of skills and abilities that they should fill in for each student. Based on that checklist we identify students who show any kind of delay. We send another checklist to the parents of those children to make sure that they show the same symptoms at home and that it is not related to shyness or fear of school. Finally, based on spotting the delay in students we follow the same steps of intervention as previously explained.

*Question 4:*

**The researcher:** What are the tests used by the school for diagnosing dyslexia?

**The school counsellor:** We have a list of assessments that we choose from depending on the inputs about each child. This list is mainly for dyslexia in English

Stanford Binet Benchmark, LDDRS, Peabody Picture Vocabulary Test, Ravens Progressive Matrices (RPM), Vine land Adaptive Behavior Scale, Beta 111, Learning difficulties tests and IQ Tests

**The researcher:** What about assessments of dyslexia in the Arabic Alphabet?

**The school counsellor:** We usually follow the same steps and assessments for English dyslexia because there is a shortage in the available assessments for dyslexia in Arabic. We also use the Assessment developed by Dr Fathy Al Zayyat, an Egyptian professor, it gives us an indication of dyslexia in Arabic.

*Question 5:*

**The researcher:** Are there any curriculum modifications offered to students with dyslexia?

**The school counsellor:** No, It is not recommended to modify the curriculum for children with dyslexia.

**The researcher:** Why?

**The school counsellor:** Because dyslexia is not an intellectual disorder. Children with dyslexia usually have an average or above average IQ. They do not need modification in the contents but rather accommodations for how the contents are being taught. Using the appropriate strategies for Dyslexia, children make a remarkable improvement and they show amazing results. The only case of modifying the curriculum for a child with dyslexia is when dyslexia is accompanying another disorder that requires modifications.

*Question 6:*

**The researcher:** How are children with dyslexia taught in the school?

**The school counsellor:** They attend a regular curriculum in regular classes. We guide the subject teachers with guidelines to follow in class to help those children. In parallel, we pull out the children in the activity sessions to attend extra classes. Those extra classes are mainly for skill development like phonological awareness but unfortunately, it is usually used for academic support to help the child catch up with his peers.

*Question 7:*

**The researcher:** Are there in-class learning support assistants to help those children catch up with classwork?

**The school Counsellor:** No, unfortunately, we do not have the job function of “Learning support assistants”. We depend on the subject teachers and the SEN teachers. We have an assistant inside each class of the elementary stage, but her role is mainly life skills such as organizing school bags, accompanying children to the bathroom, or guiding them during break times but she does not intervene academically.

*Question 8:*

**The researcher:** What are the provisions offered to children with dyslexia in school?

**The school counsellor:**

First, they have access to recorders to record the lessons instead of writing.

Second, in the library, they are offered to listen to audio books.

Third, they can solve interactive task sheets such as choosing the correct answer or matching pictures instead of the normal sheets that depend on long questions.

Fourth, In the assessment, they have the right to 25 minutes more added to the regular exam duration.

Fifth, if the dyslexia is severe we offer the child an adult to help him/her in reading the exam or writing in case of dysgraphia.

Sixth, learning strategies are encouraged inside the class such as peer learning. We recommend the teachers encourage friends to help each other read and better understand the content in the class sheets.

*Question 9:*

**The researcher:** What are the challenges that face the school to deliver a good education to children with dyslexia?

**The school counsellor:**

First, teachers' understanding of the problem. Children with dyslexia avoid participating in class or answering questions so teachers may misunderstand that to shyness or motivation. This makes discovering the issue late.

Second, parents tend to refuse our diagnosis and tend to blame the teachers for the low performance of their children. The debate arises especially when the child is facing dyslexia in one language because parents believe that if a child could learn a language, he will be able to learn any other language.

Third, families and teachers expect that children improve academically with the intervention. This leads to SEN teachers giving academic support more than skills development.

Fourth, sometimes families refuse to let their children attend the school support sessions. This is because they believe that private centres are more specialized and effective than schools. In this case, the school provide the subject teachers with recommendations to follow in class.

*Question 10:*

**The researcher:** Do you recommend different tests to be used instead of the currently used ones?

**The school counsellor:** Yes, it is better to have a unified diagnostic test to be used by all assessment specialists. This diagnostic test should be accredited and approved by the KHDA. The current situation is that school psychiatrists choose from the diagnostic tests according to their preferences which results in inconsistent evaluations and reports when staff changes.

## **Appendix IV**

Teachers' Questionnaire in English:

## Survey on Dyslexia Knowledge among language teachers

This is a 5-minute survey that will be used for research purposes. Your participation is entirely voluntary, and you can opt out at any time. This survey is completed anonymously, and all personal information is kept private. Please respond to the questions from your own experience and knowledge.

1. Dyslexia is a learning disorder characterized by difficulty reading and writing due to difficulties detecting speech sounds.

- True
- False
- I don't know

2. A child who has dyslexia and is having difficulties learning English will have the same difficulty learning any other language.

- True
- False
- I don't know

3. A low IQ score is an indicator of dyslexia

- True
- False
- I don't know

4. Dyslexia is caused by a genetic mutation.

- True
- False
- I don't know



5. Short memory is a symptom of dyslexia

- True
- False
- I don't know

6. Dyslexia can be cured and gone forever

- True
- False
- I don't know

7. A child with dyslexia can never misspell a word that he already memorized well.

- True
- False
- I don't know

8. Changing the order of letters in a word is one of the Dyslexia symptoms

- True
- False
- I don't know

9. Children with dyslexia tend to avoid public reading

- True
- False
- I don't know

10. Dyslexia makes it difficult to understand maps.

- True
- False
- I don't know

11. Using a variety of font types and sizes on a page can assist children with dyslexia focus.

- True
- False
- I don't know

12. Educating children with dyslexia with a multisensory method (seeing, hearing, touching, taste, and smelling) can help them improve their spelling skills

- True
- False
- I don't know

## **Appendix V**

Teachers' Questionnaire in Arabic:

## استبيان لقياس مدى معرفة معلمي اللغات باضطراب عسر القراءة

هذا الاستبيان مدته 5 دقائق وسيتم استخدامه لأغراض بحثية. مشاركتك طوعية تمامًا ، ويمكنك إلغاء الاشتراك في أي وقت. يتم إكمال هذا الاستطلاع دون الكشف عن الهوية ، ويتم الاحتفاظ بسرية جميع المعلومات الشخصية. يرجى الرد على الأسئلة من خيارك ومعرفة الشخصية.

 elham.othman@gmail.com (not shared) [Switch account](#)



عسر القراءة هو اضطراب في التعلم يتسم بصعوبة القراءة والكتابة بسبب صعوبة اكتشاف أصوات الكلام.

- صح
- خطأ
- لا أعلم

الطفل الذي يعاني من عسر القراءة ويواجه صعوبات في تعلم اللغة الإنجليزية سيواجه نفس الصعوبة في تعلم أي لغة أخرى.

- صح
- خطأ
- لا أعلم

انخفاض معدل الذكاء يعد مؤشراً على عسر القراءة

- صح
- خطأ
- لا أعلم

ينتج عسر القراءة عن طفرة جينية

- صح
- خطأ
- لا أعلم

قصير الذاكرة هو أحد أعراض عسر القراءة

- صح
- خطأ
- لا أعلم

عسر القراءة يمكن الشفاء منه بشكل تام

- صح
- خطأ
- لا أعلم

لا يمكن أن يخطئ الطفل المصاب بعسر القراءة أبداً في تهجئة كلمة حفظها جيداً بالفعل

- صح
- خطأ
- لا أعلم

بعد تغيير ترتيب الأحرف في الكلمة أحد أعراض عسر القراءة

- صح
- خطأ
- لا أعلم

يميل الأطفال المصابون بعسر القراءة إلى تجنب القراءة الجهرية

- صح
- خطأ
- لا أعلم

يسبب إضطراب عسر القراءة صعوبة في فهم الخط

- صح
- خطأ
- لا أعلم

استخدام مجموعة متنوعة من ألوان الخطوط وأحجامها على الصفحة يساعد الأطفال المصابون بعسر القراءة على التركيز .

- صح
- خطأ
- لا أعلم

تدريس الأطفال الذين يعانون من عسر القراءة بطريقة متعددة الحواس (الرؤية والسمع واللمس والتذوق والشم) يمكن أن يساعد على تحسين مهاراتهم في التهجئة

- صح
- خطأ
- لا أعلم

## Appendix VI

Relevant Parts of the inclusion policy:

### SEND POLICY AND PROCEDURES

#### SEND ADMISSION POLICY:

- The School has developed the SEND policy in accordance with the Federal Law (29/2006) amended by the Federal Law (14/2009), Dubai Law no (2/2014) and the Child Right Act of the United Nations to cater for the special needs students and disabilities in order to provide them with care and support to enable them fulfill their potentials in an inclusive environment.
- The School's SEND Policy is aligned with "Dubai Inclusive Education Policy Framework" to ensure educational excellence and social inclusion for all children experiencing special educational needs and disabilities (SEND).
- The School admits (SEND) students with various disabilities regardless of race, gender, or nationality and provides them with the utmost services even if this requires modifications to the school premises.

The SEND Department at [REDACTED] consists of:

- **Easy Learning Section (ELS) which includes:**
  - Students placed in special classes according to abilities
  - Partial inclusion students
  
- **Inclusion Section which includes:**
  - SEND students included in main stream classes

Each section is headed by a qualified SEND specialist who is supported by the Inclusive Education Action Team.

### **SEND PROCEDURES:**

#### **Identification & Referral**

- The early identification of SEND is desirable to minimize difficulties in the future. The process of identification is on-going; however learning disabilities may be identified at later times in the student's school life. The school follows two ways to identify SEND students.

#### **➤ On Entry (Admission Phase):**

- Parents are requested to fill in the part in the admission form declaring any specific needs/arrangements for their child/ren.
- Parents are requested to provide documents from a specialized institution that describe the type of special educational need.
- The SEND student will sit for a series of assessments by our specialists to confirm the results and identification.
- A decision will then be taken to determine whether the student will be included in the mainstream classes or in the Easy Learning Section (ELS).



- Teachers collaborate with SENDCO and parents to prepare (IEPs) for core subjects; Arabic, English, Math, Science, and social studies.
- Behavioral Adjustment Plans, Skills Development Plans, and Speech and Language Plans are prepared if needed.

➤ **Existing Students:**

- CAT4 Test and a rubric-based screening are used to identify potential SEND students.
- Specialists use special assessment toolkits to shortlist and categorize the identified potential SEND students.
- The Inclusive Education Action Team of the school discusses the specialist's recommendations and decides about the needed curriculum accommodations which might include temporary transfer of severe cases of SEND students to the ELS program.
- A meeting is scheduled with the parents to discuss the school's decision about their child and a report from a specialized institution is requested. The parents are allowed a time limit of 3 to 6 months to get the external reports.
- Teachers collaborate with SENDCO and parents to prepare (IEPs) for core subjects; Arabic, English, Math, Science, and social studies.
- If the parents refuse to cooperate with the school to provide needed accommodations, the school has the right not to register the student for the next academic year. The student will not be entitled to any charged accommodations.

**SEND Assessment Toolkits**

After securing parents' consent, the SEND specialists at the school conducts appropriate assessments including:

- Stanford Binet Benchmark
- LDDRS
- Peabody Picture Vocabulary Test
- Ravens Progressive Matrices (RPM)
- Vine land Adaptive Behavior Scale Beta 111

- Learning difficulties tests
- IQ Tests

**Set up and implementation of Individual Education Plans (IEP):**

IEPs are developed and implemented based on the recommendations of the Inclusive Education Action Team and in consolidation with HODs, teachers, parents and students.

**Evaluation and Review of IEP:**

- The progress of the IEP towards meeting the goals against starting points is tracked and a written report is shared with parents twice per term. IEPs are then amended accordingly.
- At the end of each academic year, the Head of the ELS provides the Inclusion Champion with a detailed report about the SEND students' progress and attainment, social development, and a set of recommendations for the next academic year which might include recommendations to partially or fully include the student in the main stream classes. Other students continue in the ELS until they show readiness to be transferred to the main stream.
- Partial-inclusion SEND students will then be enrolled in the main stream in Islamic Studies, Social Studies, and Activities (PE/Art) and pursue the other subjects in the ELS.
- Full-inclusion students will be enrolled in the main stream in all the subjects under the supervision of the SEND department.
- When transferring a SEND student from ELS to main stream classes,
  - The Inclusive Education Action Team holds a meeting with the parents to discuss their child's readiness for inclusion.
  - The SENDCO ensures that inclusion is effective and the student is adjusting to the new environment through a series of observations.
  - The SENDCO ensures that the academic and behavioral plans are followed and students are making the desired progress.

- Withdrawal sessions for academic/behavioral support, or speech therapy are then provided to individual students according to their needs.
- Parents play an integral part in the discussions and decisions made in the benefit of the students' welfare and benefit.

### **Reporting**

SEND students reporting is aligned with the whole school assessment policy. A report card is issued after each term and a remark is added on the report card for SEND students which indicates that they are in a special program.

### **Components of SEND Student's File:**

- Referral Form.
- Minutes of Meetings.
- Formal and Informal assessments
- Medical reports and history
- IEP's Summary of Goals and Development
- Review reports and progress.
- Behavior Modification Plans.

### **Learning Support Assistants (LSAs)**

- Facilitate one-to-one and small group interventions as requested by the class teacher.
- Contribute to the planning and evaluation of the work carried out with identified children and report upon this in a timely manner.
- Responsible to meet targets set during appraisal which includes attending any training offered.

### **Reviewing the Policy**

This SEND policy is shared with all members of the school community and is reviewed annually.