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**Title**

**The Impact of Dyslexia on the Learner's Performance  
(A Case Study of Dyslexic Learners)**

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## **Abstract**

This study sets out to explore the issue of dyslexia in general and the impact of dyslexia on the learner's performance in particular. In precise terms, the present research work is an attempt to analyse its impacts. This study extends the range of current academic knowledge of dyslexia by exploring the experiences of dyslexic learners, teachers, and speech therapists. The participants of this study are teachers, learners, and speech therapists. More specifically, the sample of this study consists of a speech therapist, eight dyslexic learners, and nine teachers from a primary school, a middle school and a high school. It is difficult to describe the experiences of the respondents by using numbers; hence, a qualitative approach has been employed to collect and analyse data. Data were collected through participant observation, a questionnaire, and structured interviews. Several conclusions can be drawn from our findings. Firstly, the data from the research study indicate that dyslexia involves an unexpected difficulty in learning to read and to write, and it is related to the phonological deficits. Secondly, another finding is that dyslexic learners fail to master the basics of reading and writing at the beginning of the primary school, and they have poor auditory memory for learning nursery rhymes, chants, numbers, days of the week, colors, shapes, and spelling their own names. At the middle school, dyslexic learners may have untidy handwriting, bizarre and inconsistent spelling. The results of this study have shown that dyslexics fail to achieve the expected level at the secondary school; in addition, they have difficulties in structuring and organizing their ideas in writing; hence, they have difficulty in making sense of what they write. Thirdly, based on the results of the participants' perspectives, it has been concluded that dyslexia can have social and emotional impacts on the dyslexic people. The researcher found that low self-esteem will cause the development of negative and poor self-image for learners who experience dyslexia. The research work concludes with the findings and the limitations of the study.

**Key Terms:** Dyslexia, Dyslexics' Performance, Dyslexic Learners, Learning Styles, Teaching Strategies, Assessments.



# **Dedication**

*I dedicate this modest work to my beloved  
parents.*



## Acknowledgements

Before all, our thanks go to the Merciful God.

I am thankful to my parents Latifa Djlassi and Mohammed Oufiane for their moral assistance and their unwavering support throughout my life.

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Last but not least, I am grateful to all my teachers at the English department, from whom I have learnt a lot.

To everyone who helped me and supported me, I extend my sincere appreciation.

## **List of Acronyms**

**PET:** Position Emission Tomography

**FMRI:** Functional Magnetic Resonance Imaging

**DD:** Developmental Dyslexia

**CELF:** Clinical Evaluation of Language Fundamentals

**CTOPP:** Comprehensive Test of Phonological Processing

**DIAL:** Developmental for Assessment of Learning

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## **General Introduction**

### **1. Background Information**

It has been more than one hundred years since Dr Kussmaul mentioned the case of an intelligent man who had difficulties in learning to read. He called the problem 'word blindness'. In 1887, Rudolph Berlin, a German ophthalmologist used the term 'dyslexia' in place of 'word blindness'.

Dyslexia is a neurological problem of genetic origin; it refers to a learning disability. It is also called "specific reading and writing difficulties". The International Dyslexia Association (2002) has suggested this definition: "Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities."

The word dyslexia derives from the Greek prefix '*dys*' and the root-word '*lexis*'. The former means 'difficulty' whereas the latter means 'word or language'. Dyslexia is usually associated with reading and writing difficulties; people with dyslexia may also experience difficulties with vision and memory. Several studies have shown that if dyslexia is not diagnosed at an early stage, it will have an impact on the performance of the learner.

Defining the learning styles of dyslexics, teacher strategies, and classroom strategies can help professionals to help dyslexic learners to learn better. Assessments of dyslexia can also be a good strategy to know whether the learner is a dyslexic or not. Lack of assessment can have a negative impact on the social life for the dyslexic learners.

### **2. Statement of the problem**

From the researcher of this current reports experience, it is observed that dyslexia can have an impact on the learner's performance. Additionally, the researcher observed that some teachers were not in a position to cope with dyslexia for several reasons. First of all, teachers may not be always aware of the issue of dyslexia. Secondly, they lack the

knowledge about the nature of the difficulties of their dyslexic students' educational needs. Finally, teachers are not equipped with the teaching tools; for example, appropriate techniques, tasks and materials to help dyslexic learners.

### **3. Research Questions**

The study explores these research questions:

- 1 Why do some dyslexics fail at school?
- 2 What are the characteristics of the learners who have dyslexia?
- 3 Is dyslexia a developmental or an acquired disorder?
- 4 How do dyslexic learners learn?
- 5 How do teachers deal with the dyslexic learners?

### **4 .The Aim of the Study**

The general purpose of this present study is to explore how dyslexia influences the dyslexic learner's performance. More specifically, the aim of this study is:

1. Investigating what experiences and thoughts dyslexic learners, teachers, and speech therapists have about dyslexia.
2. Understanding the interaction between teachers and dyslexic learners.
3. Evaluating the performance of a sample group of dyslexic learners.

### **5. Hypotheses**

Based on the research questions that were formulated before, the researcher hypothesized that:

A -If dyslexic learners are not diagnosed at an early stage, this will have an influence on their performance.

B- Understanding learning styles, teaching styles, and classroom strategies will help teachers to communicate with their dyslexic students.

## **6. Research Methodology**

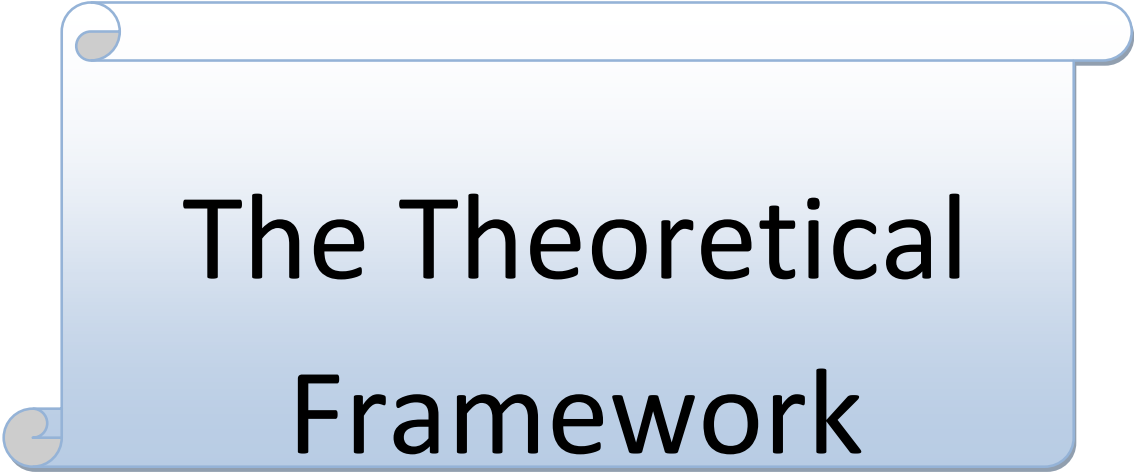
Because the aim of this study is to discover what experiences and thoughts dyslexic learners and professionals have about the issue of dyslexia, it has become apparent to the researcher that qualitative approach is the most appropriate for this study. The researcher conducted qualitative interviews with a speech therapist and nine teachers in a variety of educational settings such as primary school, middle school, and high school.

## **7. Structure of the Thesis or Structure of the Study**

The research work is divided into four chapters:

In the first chapter, the researcher introduces background information and the literature review on a general overview of dyslexia and dyslexics' performance while the second chapter describes the dyslexics' performance in the classroom. The third chapter identifies the research methodology that is used in the practical framework whilst the fourth chapter synthesizes the findings that are collected.

This work ends with a conclusion, which draws a general picture of results, limitations, and the perspectives of this study for future research



# The Theoretical Framework

# Chapter One

**A General Overview of Dyslexia**



## Chapter One: A General Overview of Dyslexia

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### 1.1 Introduction

The first chapter is an attempt to portray some of the issues regarding dyslexia. The chapter will begin by looking at the definitions, the causes, and the characteristics of dyslexia. The remainder of the chapter will look at dyslexia at the phonological level, brain functions and dyslexia, and types of dyslexia.

### 1.2 Defining Dyslexia

Dyslexia is a learning difficulty that can occur across all educational levels and age groups. In addition, dyslexia affects many skills involved in learning; for example, accuracy, fluency, reading and spelling (Hall, 2009, p.20). Before discussing the term “dyslexia”, it is useful to look at some history behind it. In 1878, Adolph Kussmaul, who was a German neurologist, had a special interest in adults with reading problems (Hill, 2013, p.52). Kussmaul noticed that some of his patients could neither read nor write, and then he used the term ‘word blindness’ to express their difficulties of reading and writing. In 1887, Rudolph Berlin, a German ophthalmologist, used the term ‘dyslexia’ in place of word blindness (ibid. p.53). Therefore, the term ‘dyslexia’ has been used since the early part of the 20<sup>th</sup> century.

There is a little agreement on the definitions of dyslexia because definitions vary and depend on the scientific background of the researchers (Anderson, 2003, p 18.). Firstly Brunswick (2010) states that “The term dyslexia comes from the Greek ‘*dys*’ meaning – ‘*impaired*’ – and ‘*lexis*’ – ‘*word*’, and refers to an impairment in the ability to read and spell that is not due to low intelligence or lack of educational opportunity.” (Brunswick, 2010, p.30). Secondly, dyslexia is also defined as a neurological problem of genetic origin, and it is a learning disability because it can be difficult for students to succeed academically in a typical educational environment (Michail, 2010, p.17). The International Dyslexia Association’s (IDA) definition is as follows “Dyslexia is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.” (cited in Anderson, 2003, p 27.).

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Over the last decade, definitions have moved towards including phonological deficit; for instance, Reid says that “Dyslexia is typically characterised by difficulties in phonological processing, working memory, rapid naming, and automaticity of basic skills.” (Reid, 2005, p.60). Thus, even after a century of research, dyslexia is still one of the controversial topics in the field of developmental neurology, psychology, and education.

### **The central questions that are related to the topic of dyslexia are:**

- 1 Why do some dyslexics fail at school?
- 2 What are the characteristics of the learners who have dyslexia?
- 3 Is dyslexia developmental or acquired disorder?
- 4 How do teachers deal with dyslexic learners?
- 5 Why do dyslexics exhibit impaired phonological awareness?

### **1.3 What Causes Dyslexia?**

This question can be answered in many different ways. Though the development of technology has assisted researchers to visualize the brain functions of dyslexics, the exact causes of dyslexia are still not completely clear. Additionally, the causes of dyslexia are not due to either a lack of intelligence or a desire to learn. Dyslexia can be caused by inherited factors. Rief and Stern (2010) state that “Dyslexia is an inherited neurological condition that often runs in families because there seems to be a genetic basis for this disorder.” In addition, the dyslexic brain is different from the ordinary brain. Studies have shown differences in the anatomy, organization and functioning of the dyslexic brain (Ibid).

After many years of research on the topic of dyslexia, scientists have established that dyslexia causes are associated with three main deficit theories:

## Chapter One: A General Overview of Dyslexia

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- 1 The phonological deficit theory
- 2 The magnocellular deficit hypothesis
- 3 The cerebellar deficit hypothesis.

**1-The Phonological Deficit Theory:** Before understanding the main concept of the phonological deficit theory, it would be better to have an idea about the phonological skills. The phonological skills are important for any learner to be a successful reader; the phonological skills are the ability of a reader to break a word into smallest segments to be understood. Accordingly, weaknesses in phonological skills may have an influence on the performance of the dyslexic learners. (Michail, 2010, p.60). That weaknesses in phonological skills can be related to the phonological deficit theory. The latter is one among the most prominent theories of the last decades; this theory is based on the concept that dyslexics have difficulties in the phonological processing (BrightStar Learning 2016) Some researchers such as Snowling (2000) and Stanovich (1988) suggest that people suffering from dyslexia have problems in representing, storing, and retrieving sounds. Although the phonological deficit theory was the predominant causal theory throughout most of the late twentieth century, some scholars criticized this theory, such as Stein and Walsh. (Tilly, 2003, p.66). Stein and Walsh suggest that dyslexia is caused by a sensory defect in the large nerve cells in the eye, known as ‘magnocells’ the investigations of this suggestion is called “the magnocellular deficit theory” (ibid.p.67).

**2 The Magnocellular Deficit Theory:** This theory states that the visual, learning, and processing issues of dyslexia may be due to a deficit in the magnocellular pathway. Nerve cells or ‘magnocells’ are the pathway between the retina and the visual cortex of the brain, and it carries information about rapid movement or changes in the environment. (Tilly, 2008, p. 68) People who experience dyslexia have an impairment in the visual magnocellular system, which is the part of the nervous system which allows organisms to see. Thus, Stein (2001) believes that dyslexia is caused by problems in the visual magnocellular system of dyslexics (p.50). The phonological

## Chapter One: A General Overview of Dyslexia

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deficit and the magnocellular deficit theories were the predominant theories until the investigation of Nicolson and Fawcett, who introduced the cerebellar deficit theory.

**3) The Cerebellar Deficit Theory:** this theory is one of the leading hypotheses on the causal effects of dyslexia. (Michail, 2010, p.60). According to this theory, a mild dysfunction of the cerebellum may cause dyslexia. Nicolson and Fawcett state that the cause of dyslexia is related to severe deficits in balance, motor skill, phonological skill and rapid processing. (Barbara, 2010, p.67) This led them to investigate a possible role for the cerebellum in the pattern of dyslexia difficulties. Additionally, Nicolson and Fawcett suggest that problems in writing, spelling and reading can be caused by direct and indirect cerebellar causation. (Nicolson and Fawcett, 2001, p. 3). In addition, the handwriting of dyslexic learners can also be directly linked with the cerebellar impairment hypothesis. Thus, it can be stated that the impairment of the cerebellum may cause an inability in the performance of dyslexic learners.

In summary, the phonological theory explains the difficulties of phonological processing that are encountered by dyslexics. And then, the cerebellar theory suggests that there is a problem in central processing linked to learning and automaticity. The magnocellular theory has a concept that the difficulties of dyslexic individuals are related to the visual and auditory deficits.

### 1.4 Dyslexia Characteristics of Dyslexia

There are a number of core characteristics of dyslexia that are important for identification and assessment. The first notion to be considered is that “dyslexia is individual”; that is to say that dyslexia characteristics vary greatly from one individual to another (Roy, 2014, p.55). Dyslexia can be evident within a continuum from mild to severe (Reid, 2005, p.30)

#### 1.4.1. Early Characteristics of Dyslexia in Pre-school Children

Children who experience dyslexia often talk later than other children, and they can have difficulty in pronouncing words, such as ‘*busgetti*’ for ‘*spaghetti*’, ‘*mawn*’ ‘*lower*

## Chapter One: A General Overview of Dyslexia

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‘for *‘lawn’ ‘mower’* (Reid, 2008, p.56). Dyslexic children learners have poor auditory memory for learning nursery rhymes and chants. They also have poor auditory memory for learning numbers, days of the week, colours, shapes, and even with spelling their own name (Brunswick, 2009,p.30) Furthermore, dyslexic children often find difficulties in following simple directions, particularly if two or more instructions are involved. (Hammond and Hercules,2007, p.45)

### **1.4.2. Characteristics of Dyslexia in Primary School Children (Five to Eleven Years)**

Learners who experience dyslexia avoid reading out loud, and they read slowly. (Reddic, 2010,p.30). Dyslexic learners may have an inadequate vocabulary, and they may have an inadequate vocabulary and difficulty with spelling, meaning that they often resort to using less complicated words that are easier to spell; for instance, teachers often find the same word spelt differently in the same piece of writing, e.g. *‘catch’* and *‘cach’* (Brunswick ,2009,p.50).

### **1.4.3. Characteristics of Dyslexia in Secondary School Children (Twelve to Sixteen Years)**

Many of the reading, writing, and spelling problems of primary school children with dyslexia will still be seen when they reach secondary school (Reid, 2008, p.70). Hence, their written work may contain many spelling mistakes that should easily have been identified and corrected. (Brunswick, 2009,p.58). Learners with dyslexia might have poor time-management, memory and organisational skills. Taking notes during class and following classroom instructions are often difficult for them. People with dyslexia need more time to process information. (Rief, and. Stern, 2010, p.30). People who experience dyslexia take longer processing information because of taking indirect routes to arrive at answers. People who experience dyslexia in the secondary school can have difficulty in remembering information, such as mathematical formulae, poetry, and foreign language vocabulary. (Brunswick, 2009,p.70)

## Chapter One: A General Overview of Dyslexia

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### 1.5 Dyslexia at the Phonological Level

#### 1.5.1 Phonological Awareness

When a learner starts to learn a new word, he/she tries to recognize what a phoneme is, yet people who have dyslexia find difficulties to recognize what a phoneme is because they have phonological awareness problems.(Guardiola, 2011, p.56). The phonological awareness is the ability to manipulate the phonemes or the speech sounds of a language. Renske de Leeuw (2010) states that “Phonological awareness is the understanding and awareness that spoken words consist of individual phonemes, or speech sounds”

Once learners have mastered the fundamental skills of phonology, they are able to distinguish between words that share the same sounds (Guardiola, 2011, p.60). In addition, the problems of students with dyslexia become very noticeable once they begin learning to read; they have extreme difficulties acquiring accurate and fluent phonemic decoding skills. Additionally, phonological awareness is an important prerequisite because it is related to the recognition of phonemes knowledge, but dyslexic students struggle to acquire this knowledge. Treiman (2000) argues that

When learners have both phonological awareness and letter-sound knowledge, they are in a position to grasp the alphabetic principle: the idea that letters in printed words represent the sounds in spoken words in a manner that is more-or-less regular depending on the transparency of the spelling system.

The phonological awareness is an important precursor of reading; this is to say that learners may learn how to acquire the phonological awareness when they learn how to separate word units in the speech continuum (op.cit. P.66). Spoken words are composed of phonemes, and the phoneme is the set of smallest units of speech in a language that distinguish one word from another. (Rief, and. Stern, 2010, p.37). For example, the

## Chapter One: A General Overview of Dyslexia

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word ‘*cat*’ has three phonemes, /k/-/a/-/t/. Therefore, when students start to learn to read, they become aware of these phonemes. (Rice and Brooks, 2004,p.50). When dyslexic students learn that spoken words and syllables can be divided in different ways, they can use this understanding to manipulate words by adding sounds (ibid, p.60).

### 1.5.2 Phonological Processing

Dyslexia is caused by special difficulties processing in the phonological features of a language (Riddick, 2010, p. 50). The phonological processing consists of several skills, such as reading and writing. A deficit in phonological processing can be noticed in some tasks, such as rhyming, word repetitions, phonetic spelling, and rapid naming. (Guardiola, 2011, p.65) Furthermore, the phonological processing is related to intelligence (Fletcher, Denton, and Francis, 2005, p.69). Thus, if dyslexic learners have extreme phonological processing weaknesses, it will be difficult for them to acquire reading skills.

### 1.5.3 Phonological Awareness and Reading Ability

The relationship between the phonological awareness and reading ability is interactive (Riddick, 2011, p. 70). One way of exploring the phonological awareness of the learner is the test of phonological awareness. In this situation, a teacher can test the reading ability of learners before they learn to read (Rief, and. Stern, 2010, p.40). The teacher might find that their reading ability could depend more on sight word recognition and contextual clues than the phonological awareness (Riddick, 2011, p. 70). For instance, a teacher can request the reader to produce rhymes, or he/she may ask the reader the following question “what word do you get if you add ‘*p*’ onto ‘*en*’?” (Hayes, 2005, p.30). Accordingly, the test of the phonological awareness can be a good predictor of reading ability. This kind of test may help readers to get sophisticated phonological awareness (Brunswick, 2009, p.40). The deficits of the phonological awareness can be noticeable in the dyslexic learners. The dyslexic reader will have no

## Chapter One: A General Overview of Dyslexia

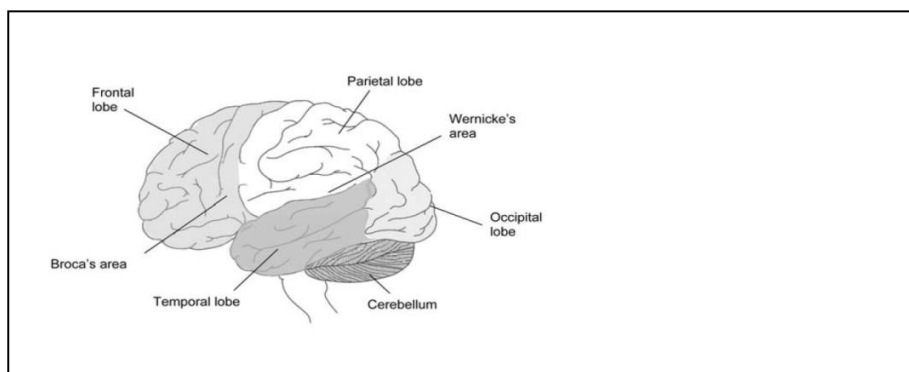
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problems in reading words that he/she is familiar with, but he/she will have difficulty with pseudo words and unfamiliar real words

### 1.6 Brain Functions and Dyslexia

#### 1.6.1 The Reading Pathway in the Brain

Positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) techniques help researchers to contrast patterns of brain activation in impaired and unimpaired readers (Rice , 2004, p.56). It has been concluded that reading is assumed to be primarily mediated by the left cerebral hemisphere in most individuals (Leong and Joshi,1995, p.30). Before knowing the reading pathway of the brain, it is important to identify some parts of the brain. The process involved in reading is not associated with any single part of the brain (Thomson,2009, p.30). The first study of the brain's language areas dates back to the mid nineteenth century with some scholars such as, Paul Broca and Karl Wernicke. In 1861, Paul Broca, who was a French surgeon, believed that the posterior part of the left frontal cortex is responsible for language production. This part of the brain has come to be known as "Broca's area". (Yule, 2010, p.30) In 1874, a young German neurologist, Karl Wernicke, found that language comprehension is located in the posterior speech cortex, particularly in the temporal lobe. He discovered that damage to this area could cause speech comprehension difficulties. 'Wernicke's area' is also called "the receptive language center" of the left hemisphere. (Yule, 2010, p.70) Thus, this part will be a general overview of how the very complex brain allows us to read.



**Figure 1: The lobes of the human brain** (Brunswick, 2009,p.56.)



## Chapter One: A General Overview of Dyslexia

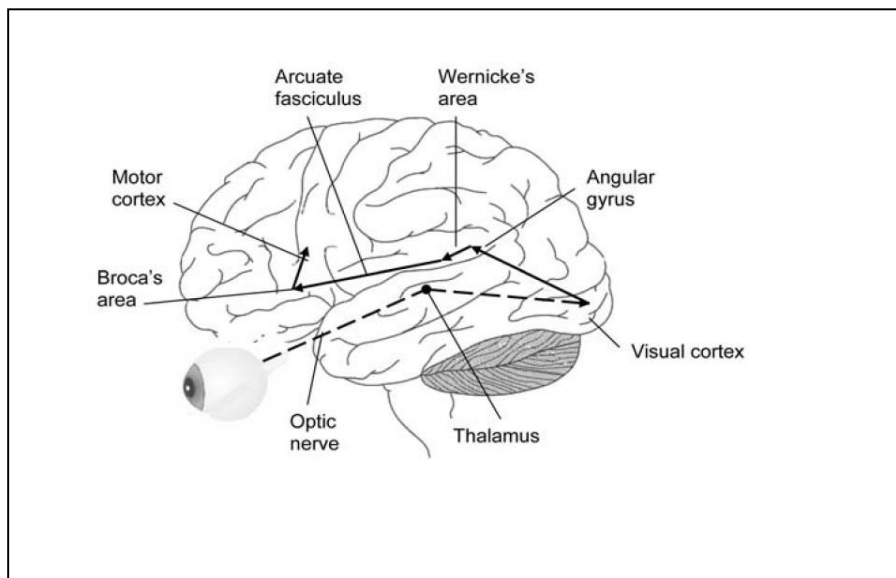
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The first step of reading is analyzing the structure of the written word (Reid,2010,p.96) .When a reader starts to read a word, the signals of the word are transmitted to the optic disk at the back of the eye. And then, these signals are sent via the optic nerve to the thalamus. The thalamus is responsible for sensory information (auditory information from the ears, gustatory information from the taste buds, and somatic information from the skin) and passes it on to the part of the brain to be analyzed (Brunswick, 2009, p.25). After that, the visual information is sent to the visual cortex. The visual cortex is responsible for analyzing the visual features of a word. Next, the angular gyrus that is located in the parietal lobe of the brain receives the visual information. Damage to the angular gyrus causes difficulties with reading.

The sound of the spoken word is passed from the angular gyrus to Wernicke's area where it is comprehended. In this process, the reader understands what he/she reads (Sandra and Stern, 2010,p.56). Then, if the reader wants to pronounce the word, the signals are then transferred to Broca's area where preparations are made to produce it. A signal is then sent to the motor area to physically articulate the word.

It has also been noticed that dyslexic brains and non-dyslexic brains look different. Dyslexics use the right hemisphere of the brain to understand and recognize words (Sandra and Stern, 2010,p.60). Furthermore, dyslexic readers show differences in activity in various brain areas, such as the visual system, the parietal lobe, and occipital lobe. (Karlsen ,1989,p.40) These perceptions indicate that reading failure is somehow due to failure in the functioning of the left hemisphere.

## Chapter One: A General Overview of Dyslexia



**Figure 2: The Reading Pathway in the Brain** (Brunswick, 2009)

### 1.6.2 Types of Dyslexia

#### 1.6.2.1 Acquired Dyslexia

Acquired dyslexia arises as a result of neurological damage, typically during a stroke or brain trauma (Joshi ,1995,p.92). Additionally, acquired dyslexia is totally different from a dyslexic individual who has always had it. People with severe brain injuries can exhibit symptoms of dyslexia. All patients so far reported with acquired dyslexia have had extensive left-hemisphere damage sufficient to produce aphasia (normally Broca's aphasia) and normally also a left hemiparesis (Coltheart, 1980, p.30). Dyslexia can be the effect of an accident or an illness, but the injury is mild enough to cause a specific difficulty than a more general dysfunction. Acquired dyslexia has three main sub-types:

1. Deep dyslexia,
2. Surface dyslexia
3. Phonological dyslexia

## Chapter One: A General Overview of Dyslexia

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<b>Deep Dyslexia</b>	<b>Surface Dyslexia</b>	<b>Phonological Dyslexia</b>
<p>It is extremely rare, but it is severe. Dyslexic learners are not able to read simple words like “up”, “down”, “when”, “now”, and “is” .For dyslexic learners, these words are difficult to learn, to spell, and to remember. Therefore, they can come up with a visual image to understand and remember these types of words. (Farell,2006,p.21).</p>	<p>In this type of acquired dyslexia, dyslexics encounter problems with some words (for example, jetty vs. pretty; howl vs. bowl. This type of dyslexia can also be a form of developmental dyslexia.(Farell,2006,p.20).</p>	<p>Dyslexics have a specific impairment in the representation, storage and/or retrieval of speech sounds. (Farell,2006,p.20).</p>

### 1.6.2.2 Developmental Dyslexia

Developmental dyslexia (DD) is among the most common neurodevelopmental disorders(Habib, 2000, p.50). Developmental dyslexia is an impairment in the development of writing and reading skills (Leong and Joshi, 2000,p.25). Learners with developmental dyslexia have difficulties with accurate and fluent word recognition and spelling performance. Brain imaging research has demonstrated that individuals with DD exhibit difficulties in attention orienting, as well as have deficits in focusing of visuospatial attention (Richlan et al. 2011, p.20). Moreover, learners with developmental dyslexia may have other specific learning difficulties, such as dysgraphia (writing abilities difficulties), dyscalculia (mathematical abilities difficulties), and dyspraxia (motor coordination) (Leong and Joshi, 2000,p.25).

## Chapter One: A General Overview of Dyslexia

### **1.7 Assessment Procedures for Dyslexia**

Dyslexia can be a hidden disability; and undiagnosed dyslexia can have an influence on the learner's performance (Konstantina, 2010, p.2). Hence, assessment procedures for dyslexia may have a crucial role in understanding dyslexic students; identifying assessments of dyslexia will help teachers, professionals, educators, and parents to improve the performance of the dyslexic learners. (Jill and Fabian,p. 22). Assessment procedures will help teachers to be able to highlight any discrepancies between oral written performances. (Snow, Burns, and Griffin,1998,p.25).

#### **1.7.1 Assessments of Dyslexic Learners**

Assessments are a set of tasks that help educational psychologists and teachers to identify the level of the functioning in the reading, writing and spelling skills of the learner (Tilly and Jane, 2008,p.85). There are several assessments that can be used by educational psychologists as well as teachers.

##### **1.7.1.1 Observation Assessment**

Observation assessment can help educational psychologists and teachers to know the strengths and weaknesses of dyslexic learners (Mack, A., 1997,p30). Throughout the observation, it is important to focus on the learning styles of learners and the difficulties experienced in the learning task.( Dorothy, 2009, p15).

**1.7.1.2 Clinical Evaluation of Language Fundamentals (CELF):** This type of test is based on identifying, diagnosing, and evaluating language and communication disorders in children, adolescents, and young adults between 5-21 years of age. (Tests for Dyslexia and Learning Disabilities) The main focus of this test is on expressive and receptive language. In addition, it includes tests for the assessment of pragmatics, semantics, and memory. (ibid)

**1.7.1.3 Comprehensive Test of Phonological Processing (CTOPP):** This assessment measures the phonological abilities and processing skills (Jenny, 2004, p. 15). It includes three

## Chapter One: A General Overview of Dyslexia

indicators: phonological awareness, phonological memory, and rapid naming. The test is organized for children, adolescents, and young adults between 4-24 years of age. (**Tests for Dyslexia and Learning Disabilities**, <http://dyslexiahelp.umich.edu/professionals/learn-about-dyslexia/diagnosing-dyslexia/tests>)

**1.7.1.4 Developmental Indicators for the Assessment of Learning (DIAL):** This test is based on the cognitive concepts, language, motor, self-help, and social-emotional aspects. The test can be administered in different settings, and includes a parent questionnaire. Moreover, (DIAL) can be applied on both first language and second language learning. (Tests for Dyslexia and Learning Disabilities, <http://dyslexiahelp.umich.edu/professionals/learn-about-dyslexia/diagnosing-dyslexia/tests>)

**1.7.1.5 The Diagnostic Assessment of Spelling, Reading, and Writing:** If dyslexia is suspected, simple tests of phoneme awareness and letter naming can predict later spelling problems as well as reading problems. (Teachers Strategies for dyslexia,2006 ,p.22) In addition, the test of reading includes;

- print awareness,
- phonological awareness,
- letters and sounds,
- word recognition,
- word analysis,
- oral reading
- accuracy and fluency,
- silent reading comprehension,
- spelling,

## Chapter One: A General Overview of Dyslexia

- word meaning (Konstantina, 2010, p.30).

Furthermore, the test of writing is given to measure the ability in spelling, capitalization, punctuation and sentence structure.

Above all, assessment should be linked to teaching and should provide the teachers with guidance in the development of teaching. Thus, parents and guardians always have the right to request a referral for a dyslexia assessment at any time (Jill and Fabian,p. 22)

### **Conclusion**

This chapter focused on the definition, the causes, and the characteristics of dyslexia. This chapter also included the phonological level, brain functions and dyslexia, types of dyslexia, and the assessments of dyslexia. Assessment is not a one-off diagnostic exercise; it is a continuous and dynamic process that incorporates more than administering a test. (Lindsay and Reid,2003,p.80).If dyslexia is not diagnosed at an early stage, this will have negative long-term effects. In the next chapter, a more detailed review of the dyslexics' performance in the classroom will be discussed.

# Chapter Two

## **Dyslexics' Performance in the Classroom**

## **2.1 Introduction**

The second part will be about dyslexics' performance in the classroom. The researcher observes that if learners have dyslexia, this will have an impact on their performance in the classroom. The second part will be about learning styles and dyslexic learners, teaching styles and dyslexics, assessment procedures for dyslexia, and social and emotional perspectives of dyslexics. The research questions of this part are:

Does learning style enhance the performance of dyslexic learners?

What are the effects of teaching styles on dyslexics?

Do assessment procedures help professionals to recognize the difficulties of dyslexic students?

Does dyslexia have an impact on the social and emotional aspects of dyslexics?

## **2.2 The Difficulties of Dyslexics**

Before discussing the learning styles of the dyslexic learners, it is useful to know the difficulties that are encountered by dyslexics; these difficulties can be listed as following:

### **2.2.1 Reading**

Dyslexic readers have problem in reading words; they may see the letter 'd' as 'b'; or they may see the word 'was' as "saw". (Gilroyet al.2003,p.10). In other words, they confuse letters with similar shapes such as 'm' and 'w' and 'u' and 'n'. (Lindsay and Reid,2003,p.22).

### **2.2.2 Spelling**

One common belief is that spelling problems stem from a poor visual memory for the sequences of letters in words ( Mack, A., 1997,p23). Dyslexics struggle with spelling and face obstacles in learning to cope with this aspect of their learning disability; they may pronounce the word 'elefant' for 'elephant', or they can not differentiate between 's' and 'z' (Lindsay and Reid,2003,p.27).



### **2.2.3 Memory**

Dyslexics find difficulties in remembering instructions, appointments, numbers in sequence, facts, and dates; they usually need cues to remember things. (Taeko N.,2012p.50).

### **2.2.4 Writing**

People who experience dyslexia have difficulties to copy down words from the board, and they have inconsistent handwriting style; reluctance to write ( Mack, A., 1997,p28).

### **2.2.5 Sequencing**

Dyslexic learners find problems to put information in the correct order, such as sequencing letters, words, numbers, days of week/months of year. (Lindsay and Reid,2003,p.30).

## **2.3 Learning Styles and Dyslexic Learners**

Dyslexic learners need to identify their learning styles to develop self-sufficiency in learning.(Benova and Mehova,2012,p.20). Understanding learning styles will help teachers to communicate with their dyslexic students. (Reif and Stern, 2010, p.60). The question at the heart of this part is to know whether learning styles could enhance the performance of dyslexic learners or not.

### **2.3.1 Definitions of Learning Style**

The term 'learning style' has been widely used in psychology and pedagogy since the 1930s (Benova, 2012, p.5). A learning style is a learner's approach to learning and using information; each learner prefers a specific learning style and technique to learn. Riding and Rayner (1998) stated that learning style has a close relationship with cognitive style (p.49).Cognitive style refers to the preferred way for individual processes information. Additionally, cognitive style is described as a constraint which includes basic aspects of an individual's psychology such as feeling (affect), doing (behaviour) and knowing (cognition) (Peer and Reid, 2003, p.50). In other words, cognitive style is usually described as a personality dimension which influences attitudes, values, and social

interaction of the learner. Kolb's (1984) claimed that learning style is associated with Piaget's emphasis on assimilation and accommodation.(p.57).Moreover, assimilation and accommodation are the two complementary processes of adaptation described by Piaget, through which awareness of the outside world is internalised. Assimilations is the part of the adaptation process in which we take in new experiences and incorporate them into our existing ideas whereas accommodation is the process to accommodate the new information(ibid, p.60).

### **2.3.2 Main Characteristics of Learning Style**

Dunn (1975) mentioned that learning style has five characteristics: the environmental, the emotional, the sociological, the physical, and the psychological (p.40).

#### **2.3.2.1 The Environmental Characteristic**

When we start talking about the environmental characteristic, it is useful to talk about the classroom situation (Peer and Reid, 2003, p.57). While some learners like to study in silence, others prefer quiet background noise (ibid, p.60).In addition, some learners like to study in bright light whereas others prefer low or natural lighting. In terms of dyslexic learners, consideration must be given to lighting as inappropriate lighting (for example fluorescent lighting) can make it very difficult for a dyslexic learner to read, listen or focus. (Dunn, 1975, p.22).Similarly, dyslexic learners may find it hard to filter out background noise and will therefore need the environment to be very quiet when trying to concentrate on challenging tasks. (ibid.p.22).

#### **2.3.2.2 The Emotional Characteristic**

The emotional characteristic includes motivation, responsibility and organisational skills. (Peer and Reid, 2003, p.50). There are a number of factors to consider in the issue of the emotional characteristic. Firstly, teachers need to know the topics that interest their dyslexic learners ,and they are supposed to plan activities and tasks which will include all students of different abilities (Reif and Stern, 2010, p.50). Accordingly, dyslexic students will be motivated to do their tasks. Secondly, learners who experience dyslexia have difficulty in organizing their time and completing tasks on time. (Mortimore, 2005,p.6.).

They also have trouble in defining the steps they need to take in order to complete a task. Therefore, the responsibility of the teacher is to find a way to present educational materials in an interesting and accessible way. (Dunn, 1975, p.27).

### **2.3.2.3 The Sociological Characteristic**

The Sociological characteristic is associated with two main issues; interaction and communication.(Mortimore, 2005, p.10). Most dyslexics find it easier to learn when they work in small groups because this attitude gives them confidence, and they start to believe that they will manage the new information. (Benova, 2012, p.20). Small group activities enable dyslexic learners to interact with non-dyslexic learners. (ibid. p.21). When dyslexics start to communicate with others, this will have an impact on their way of communicating, because communication plays a foundational role in the development of any healthy relationship (Rai, 2010, p.3).

### **2.3.2.4The Physical Characteristic**

According to Dunn and Dunn (1992), the physical characteristic includes the behaviour of the learner inside the classroom. (p.22).Some learners prefer to move around while they learn, and they prefer to have frequent “breaks”, while others can sit and work for a long time without breaks.(Benova, 2012, p.27).Learners who experience dyslexia learn more effectively if learning occurs in small manageable chunks interspersed with regular breaks. Thus, in terms of physical characteristic, teachers may need to know answers to the following questions:

- Does the child move around the class frequently or fidget when seated?
- Does the child like to stand or walk while learning something new?
- Does the child snack or chew on a pencil when studying?
- During which time of day is the child most alert?
- Is there a noticeable difference between morning work completed and afternoon work?

### 2.3.2.5 The Psychological Characteristic

The Psychological characteristic includes personal characteristics, such as abilities, motivation, temperament, and thinking (Mortimore, 2008, p.30).

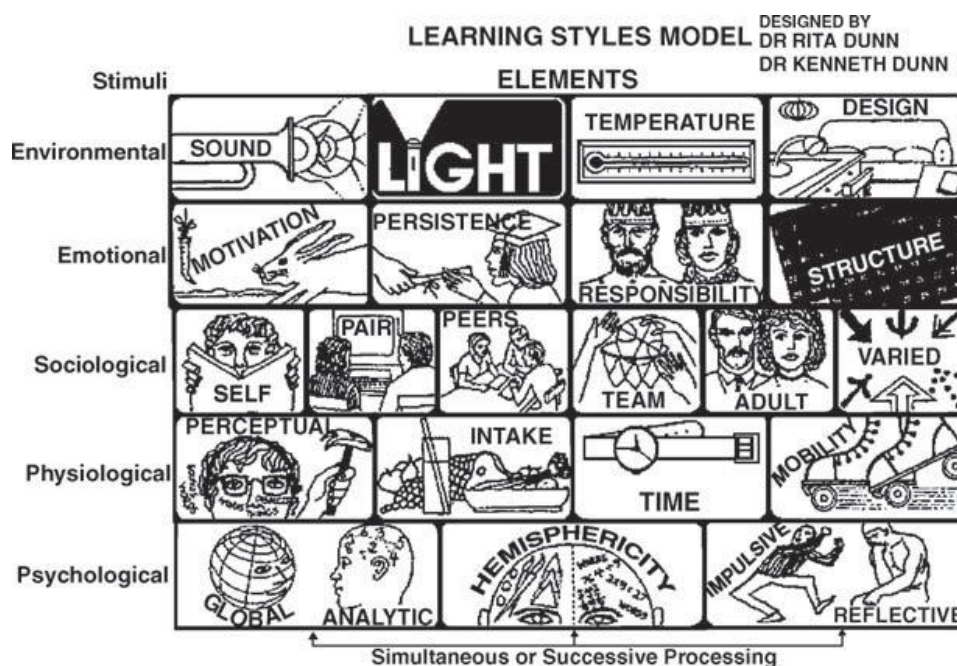


Figure 03 : The Dunn and Dunn Learning Styles Model(Mortimore, 2008, p.31).

### 2.4 Learner Types

There are a variety of ways in which learners learn and remember information most easily (Hunter and Murchu ,2010,p.15). Some dyslexic visual learners will prefer to use diagrams or pictures rather than words. Auditory learners need to hear words spoken aloud in order to remember them well, and they may recall things if they have rhythm or are set to music. (Hunter and Murchu ,2010,p.15). Yet, kinesthetic learners need to be physically involved, by movement or touch (Benova, 2012, p.20). Consequently, it has been concluded that there are three main types of learners:

- Visual learners learn better by sight
- Auditory learners learn better by hearing

-Tactile learners (kinesthetic) learn better by touch

### **2.4.1 Visual Learners**

Visual learners tend to think in pictures, diagrams, cartoons, and demonstrations. (Rai, 2010, p.10).Hence, while they start reading, they usually create a mental picture of what is described in the text, and they also get benefit from using charts, maps, notes, and flash cards when they begin studying. (ibid.p.15).Dyslexics are visual learners; this is why they think in pictures rather than words.

(David,<http://www.gemlearningcenter.com/page/dyslexic-learning-style>).

### **2.4.2 Auditory Learners**

Auditory learners learn best by hearing information (Reid,2011,p.30). Dyslexic learners may have difficulties in understanding a text if they read it, but if they listen to it they will be able to capture more of the detail. (Benova, 2012, p.18).This is to say that dyslexic learners prefer to hear information spoken (ibid. 25) . Furthermore, auditory learners focus on intonation, the speech quality, and the tone of the voice; moreover, they usually enjoy music, and remember song lyrics and conversations. (Hunter and Murchu, 2010, p.15).

### **2.4.3 Physical (Kinaesthetic)Learners**

Physical (Kinaesthetic) learners learn best through touch, movement, imitation, and other physical activities as their primary mode for taking in information. (ibid.p.75). Students who experience dyslexia remember information through writing .Additionally, dyslexic learners do not always like to read instructions, and it is difficult for them to sit still for a long time. (Benova, 2012, p.30). Many dyslexic learners favour a kinaesthetic approach.

Eventually, if teachers have insight into their dyslexic students' learning styles, they will have a better understanding of each dyslexic student's individual needs (Kormos, 2009, p15). Teachers with this knowledge are likely to put a greater emphasis on the need to vary classroom activities and to incorporate multisensory approaches (ibid, p15).

Ultimately, dyslexic students will value the fact that their teacher is interested in their learning style and will gain insight into the ways in which they can learn most. This will help them in the organisation of their learning and will guide them towards becoming more independent learners.

## **2.5 Teaching Styles and Dyslexics**

Teachers have an important role in the improvement of the performance of dyslexics; hence, this section will sketch a general overview of teacher strategies and classroom strategies. In addition, this section will provide professionals of how teachers can modify their instruction to accommodate the difficulties of dyslexic students.

### **2.5.1 Teacher Strategies**

Dyslexia is a problem that students face in today's educational system; accordingly, teachers are required to make instructional adjustments in which dyslexic students can be successful in an academic environment. (Kevin L., 1999, p. 22). Dyslexic learners have a hard time to learn through the conventional method that is focused on making learners memorize every new word that they come across (ibid. p. 25). Then, the key question that still baffles educators and professionals is "how to teach dyslexic students?" (Kindersley, 2010, p.30). Teachers should be aware of some of the barriers to learning experienced by dyslexic learners. (Reid, 2002, p.7) The barriers to learning may include:

- 1) Understanding the task: learner with dyslexia may take a lot of time to understand the task that is required from them (Kindersley, 2010, p.33).
- 2) Identifying the key points: dyslexics are not able to highlight the key points because they see letters are moving in front of them (ibid, p.33).
- 3) Processing information: people who experience dyslexia cannot process information; thus, it is vital that professionals and teachers become aware of why a learner is struggling with reading. (ibid, p.34)

The next question that should be asked is "how can teachers deal with the barrier?" It is clear that dyslexic learners struggle in the process of learning, and there are numerous

techniques for teaching dyslexic learners. (Kevin L., 1999, p. 22). The first step that teachers can follow is creating balance; teachers have to create activities that can accommodate to visual, auditory, and kinesthetic learners (Reid, 2002,p.12) .When teachers know their learner types, they can create teaching aids for their dyslexic learners. For example, for visual learners, teachers can use pictures. (Dyslexia, [http://www.dyslexiasw.com/advice/help-andamp-advice-for](http://www.dyslexiasw.com/advice/help-andamp-advice-for-teachers/teaching-strategies-for-dyslexic-children) teachers/teaching-strategies-for-dyslexic-children). For auditory learners, teachers may ask their learners to record information, and they can listen to these records later on (ibid) . Finally, for kinesthetic learners, teachers may use concrete objects which can be handled e.g. wooden letters, numbers etc.(ibid) The second step that teachers should know is student's interests ; learners need to feel confident because dyslexic's self esteem can be low (Pavey,2007,p.20).Moreover, teachers can help dyslexic learners to build self-confidence by giving specific praise; this strategy may help dyslexics to get positive self-confidence (opcit.p22).

The third step that teachers should be aware of is learner awareness or learning style. If teachers have insight into their students' learning styles, they will have a better understanding of each student's individual needs.(Benova and Mihaova, 2012,p.26) Next, teachers have to know the creativity of their dyslexic students. It means that every student should be provided with opportunities and support to develop and utilise creativity (Hunter and Murche,2006, p. 22). Healy (1992) provides ideas to develop creativity through talk. For instance, a teacher may say to his/her student "that's a new idea, interesting point, you want to know...?" (p.50).

### **2.5.2 Classroom Strategies**

Classroom strategies can help dyslexic learners to reduce the number of their difficulties; additionally, classroom strategies can help dyslexic students to get knowledge easily.(Benova and Mihaova, 2012,p.50) The aim of this part is to know whether classroom strategies can help dyslexic students to learn better.

#### **2.5.2.1 Accommodations Involving Materials**

The environment of the classroom should be comfortable so the dyslexic learner feels welcome; hence, teachers should use instructional materials that can help dyslexics to enhance

their performance (Pavey,2007,p.29).Thus, teachers can use the following material accommodations in the classroom:

### **1 Use a tape recorder:**

Learners with dyslexia have difficulties in reading, and they take a lot of time to read a word; tape recorders that include directions, stories, and specific lessons may help dyslexic learners to understand the concept of the lecture. ( The IDA, 2013, p.15).

### **2 Highlight essential information with colours:**

Learners who experience dyslexia have troubles in defining the difference between colours; accordingly, teachers have to provide colored strips or bookmarkers to make their dyslexic readers follow them when they start reading. ( (Dyslexia, <http://www.dyslexiasw.com/advice/help-andamp-advice-for-teachers/teaching-strategies-for-dyslexic-children>).

### **3 Provide additional practice activities:**

Teachers must supplement the material with practice activities, such as instructional games, peer teaching activities, self-correcting materials, computer software programs, and additional worksheets (Canter, 2006, p.16).

#### **2.5.2.2 Accommodations Involving Interactive Instruction:**

When teachers give instructions to learners, they should give time to dyslexics because they have difficulties in following instructions ( The IDA, 2013, p.16). Teachers should not expect their dyslexic learners to be able to do two things simultaneously (e.g. write and absorb instructions simultaneously).



**1 Use explicit teaching procedures:**

Teachers can include explicit teaching steps within their lessons (i.e., present an advanced organizer, demonstrate the skill, provide guided practice, offer corrective feedback, set up independent practice, monitor practice, and review) (Canter, 2006, p.16).

**2 Repeat directions:**

The teacher can ask his/her dyslexic students to repeat the directions in their own words, so dyslexics can differentiate between directions (ibid,p.16).

**3 Provide students with a graphic organizer:**

Teachers can give an outline and chart; this helps students to see the relationships among concepts and related information. (Reid, 2002, p.7).

**4 Use step-by-step instruction:**

Teachers can present new or difficult information in small sequential steps; this helps learners with limited prior knowledge that need explicit or part-to-whole instruction. (Canter, 2006, p.16).

**5 Writing New Words on the chalkboard:**

Teachers can write new vocabulary words on the chalkboard or overhead (ibid.p.17).

**2.6 Social and Emotional Perspectives of Dyslexics**

Samuel T. Orton was one of the first researchers to describe the emotional and social aspects of dyslexia. (The International Dyslexia Association (IDA), 2013:5) He stated that if dyslexic learners are not diagnosed at an early stage, this will have an influence on their emotional and social aspects. This happens because dyslexics believe that they have negative characteristics, such as believing they are 'stupid', 'lazy', and 'crazy'. When dyslexic learners believe these negative characteristics about themselves, this will have an impact on their self-esteem and self-concept. Hence, the following section will be an attempt to illustrate that dyslexia is not just an academic issue but also one of self-esteem and self concept.

### **2. 6.1. Self-Esteem**

According to Coopersmith (1967), self-esteem is the personal idea or judgments that we have about ourselves (p.30). In addition, self-esteem is a crucial issue to consider for students with dyslexia because the relationship between dyslexia and confidence is the clue to understand how to improve the learning of dyslexic students. In addition, the problem with low self-esteem is that it may cause the poor self-image; accordingly, it is obvious that the failure of a learner can have an influence on the learner's self-esteem, and he/she tends to fall in his/her academic studies (Morgan, 1996,p.30). Furthermore, there is a strong correlation between learners' self-esteem and their school achievement/performance. Some scholars, such as Riddick, Sterling, Farmer, Peer, Reid, and Morgan argued that frustration in students with dyslexia in most cases can lead to antisocial and deviant behaviour, especially with those who suffer from low self-esteem (Reid, 2011, p8). Scott (2004) believes that the basic problem of self-esteem is that students feel separated and different from their peers (p 12). Therefore, students with dyslexia often feel ignorant and unhappy unless they can read. (IDA, 2013,p.7) Furthermore, children with dyslexia associate intelligence with the ability to read. (Humphrey and Mullins, 2002 p, 22).

Gilroy (1995) carried out a research study about self esteem of dyslexics. During the study, Gilroy spoke to dyslexic adults and she noted that they used certain negative phrases in their speech, such as 'I am useless at 'five times, 'could never'-three times, 'typical me' twice, 'I have never been good at' twice and 'mess' was also repeated twice. Some adult dyslexics remembered their teachers' negative reactions; they described how miserable their life was in school because of teachers' lack of support and understanding (Reid, 2011, p15). This point is further supported by the following testimonials by adults with dyslexia: 'The teachers always seemed to be too busy to give me any extra help' (Aileen and Randall, 1996 p. 54). 'I could never finish copying from the blackboard before it was rubbed off by the teacher.' (Hughes and Dawson, 1995 p.183).

On the other hand, not all teachers ignore and misunderstand the attitude of dyslexic learners because there are some teachers who do all their best to support the learners with dyslexia to have positive self-esteem (Humphrey and Mullins, 2002 p, 27). The general issue is that dyslexic students, who do not receive a certain amount of support and help from their teachers and parents, suffer with behavioural and emotional difficulties (op.cit., p.30). Thus, students with dyslexia may need more attention and confidence; hence, teachers and parents can have a crucial role in giving learners confidence and positive self-esteem.

### 2.6.2 Self Concept

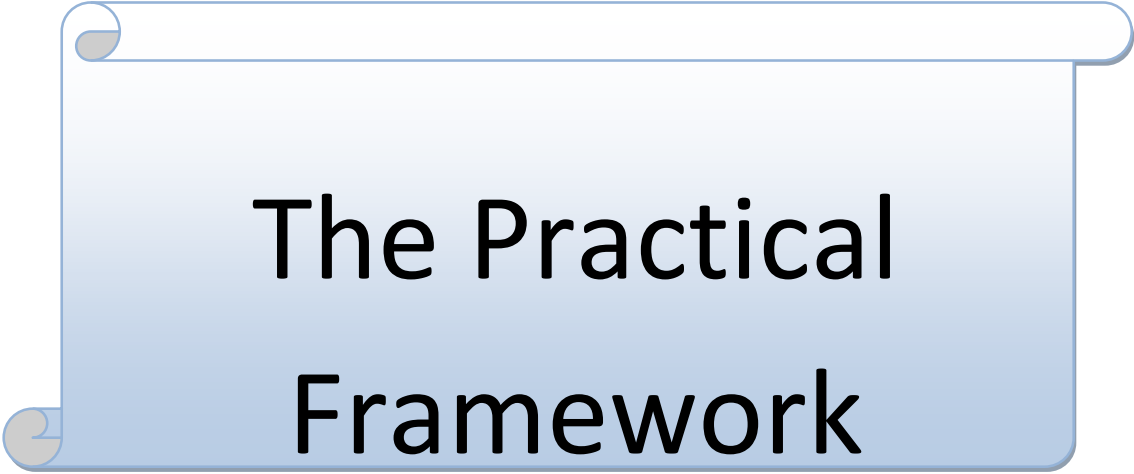
Self-concept is a group of ideas and perceptions that people have about themselves. (Konstantina, 2010 ,p.77) In addition, people try to describe some of their qualities without trying to categorize them as good or bad. In other words, people always try to evaluate their own abilities comparing them with others abilities when it comes to self-esteem. Moreover, self-concept can be the umbrella term of three aspects: self-image, ideal self and self-esteem. (ibid. p. 79)

Battle (1992) stated that the problem with dyslexics is that once learners' self-esteem is ingrained into their self-concept, it becomes very difficult and challenging to alter, and it will remain stable and certain (Battle, 1992). People who experience dyslexia should have a positive image about themselves to handle difficult situations in life such as prejudice, failure, and so forth (Green, 2014,p.30). The case of Suzanne can be an example to illustrate the relationship between self-concept and dyslexics. Suzanne is one of the participants in the study of Kloomok and Cosden's (Michail, 1998, p.55). Kloomok and Cosden tried ( I would suggest a more formal word such as attempted) to portray the relationship between dyslexia and self-concept . In their study, Suzanne believed that she was not intelligent when she was at school due to the way she was treated. Then, she stated 'I was told I have to stand on the desk if I didn't spell the word 'away' correctly; ... so at secondary school it didn't surprise me that I was bottom of the class really, that's where I belonged (p. 1000)'.

Most dyslexic adults that go through the educational system without being identified in the early stages start to feel that they are stupid or lazy (Konstantina, 2010,p.90). The effect of one's self-concept is real factors that students need to feel valued whether they have special educational needs or not(Green, 2014,p.37). Thus, self concept and self esteem are the key aspects of a student's ability to learn and progress (ibid, p.38).

## **2.7 Conclusion**

This chapter has focused on the performance of the dyslexic learners in the classroom. Learning styles, teaching strategies, and classroom strategies have been discussed. The recent research shows that dyslexic learners learn better when they are taught in their preferred learning style. In addition, teachers need to be responsive to learners' different learning styles. Furthermore, teachers' strategies and classroom strategies can help dyslexic learners to be improved. This chapter has also highlighted the connection between low self-esteem and the effects that can have in the life of a dyslexic learner. If a dyslexic learner has a positive self esteem; this will have a positive impact on his/ her performance. In the next chapter, a methodology of the research study will be discussed.



# The Practical Framework

# Chapter Three

## **Methodology**

### 3.1 Introduction

In chapter one, the impact of dyslexia on the learner's performance was discussed, and in this chapter the research methodology underlying the research is described. The aim of this chapter is to choose the best method for data collection and data analysis in order to produce sufficient information for a meaningful analysis of the participants' perceptions.

The instruments that were used to collect data were participant observation of eight dyslexic learners in their classroom and interviews with a speech therapist and nine teachers as well. The data collection instruments of the qualitative method (participant observation and interviews) helped the researcher to interact with the participants, know their experiences, and observe their body language. The researcher preferred to use interviews rather than questionnaires because the use of questionnaires would limit the participants' freedom to express their opinions and experiences adequately.

### 3.2 Method

Deciding which research method to use to gather data is one of the hardest decisions in a research paper; a researcher can use either quantitative or qualitative research to collect data. (Hackor, 2009, p.20) Because the aim of this research study is to discover what experiences and thoughts participants have about dyslexia, it became apparent to the researcher that the qualitative method was the most appropriate for this study.

Qualitative research focuses on how people or groups of people can have different ways of looking at reality (Hackor, 2009, p.20). Additionally, the qualitative method is commonly used for providing the in-depth description of procedures, beliefs and knowledge (ibid.p.21). In other words, qualitative research is focused on the understanding of specific individuals rather than studying the characteristic features of a large number of individuals across specific variables.

Qualitative researchers prefer to use their participants' words and use thick descriptions to see what is behind the details of everyday life while quantitative researchers aggregate large numbers of people to enumerate data into the form of tables (Janesick, 1994, p. 30). Additionally, qualitative researchers pay attention to everything that is happening around them during the time data are collected.

Participant observation, interviews and questionnaires are the main instruments that are used in a qualitative research (Gall et al., 1996, p.20) .

### **3.3. Data Collection Instruments**

#### **3.3.1 Participant Observation**

Participant observation is a qualitative method; it helps qualitative researchers to learn the perspectives held by study population. (Janesick, 1994, p. 50). Participant observation is also useful for gaining the physical, social, cultural, and economic contexts in which study participants live; the relationships among people's behaviours and activities. (Ockleford,2009, p.50)

The data collection of the research study is mainly based on the instrument of participant observation. Milroy and Gordon (2003) said that: "the principal benefits of participant observation are (a) the amount and quality of the data collected, and (b) the familiarity with community practices gained by the investigator". (68) The main disadvantage of participant observation is that it is time-consuming, yet it is useful to generate in-depth descriptions of events and to obtain information.

Participant observation is often done at the beginning of the data collection phase. Participant observation will be applied on the eight dyslexic children on their classroom. The key to discover a dyslexic learner is through following him/her along his/her reading patterns. Hence, the dyslexic children were evaluated via a set of tests; they received written and unwritten instructions that differed by condition. All subjects were instructed to describe what they see in the pictures. They were also instructed to read a paragraph and write sentences.



### 3.3.2 Interview

In general, an interview is one technique of qualitative research that is used in the descriptive studies. The interview includes verbal communication between the researcher and the informants. (Janesick, 1994, p. 55).

The interview instrument includes three common types: structured interviews, semi -structured interviews, and unstructured interviews. First, what is notable in the structured interview is that the informants' responses are limited to answering direct questions. The advantage of this type of interviews is that the interview often focuses on the central topic of the discussion. (Phellas, 2011, p.30) Second, the semi-structured interviews, the interviewer prepares a series of open-ended questions based on the topic areas the researcher wants to cover.(ibid.p.35) With the semi-structured interviews, the interviewer will usually ask the same questions to the participants without the same order or wording, and would supplement the main questions with various probes. Third, in the unstructured interviews, the informants are allowed to talk freely about the topics that interest them. (Janesick, 1994, p. 71).

The researcher has chosen structured interviews to gather data for this current study. A set of questions were prepared in advance in order to cover the topics that need to be studied. Whenever possible, the researcher will interview the participants on location at their job.

The participants of the of research study are teachers, learners, and speech therapists. More specifically, the sample of this study consists of a speech therapist, eight dyslexic learners, and nine teachers from primary school, middle school, and high school.

### **3.3.3 Questionnaire**

The questions in the questionnaire of the interview were designed in order to meet the research aim and research questions. Some items were designed to ask more direct questions about participants' perceptions about the impact of dyslexia on the learner's performance.

The problem that the researcher faced is that the informants do not speak the English language; hence, all the questions of the questionnaire were asked in Arabic. Then, these questions were translated into English (See the appendix). The researcher asked the participants the following question:

#### **Questions for the Speech Therapist and Teachers**

1 How can dyslexia be defined?

2 What are the characteristics of dyslexia?

Poor auditory memory

Trouble in learning numbers

Reading texts

Lack of confidence

Reading new vocabulary

Troubles in following directions

3 Do dyslexic learners have difficulties in phonological awareness?

4 What are the difficulties of dyslexic learners?

Reading

Spelling

Writing

Memory

5 What are the learning styles of learners who have dyslexia?

6 What are the appropriate teaching strategies for dyslexics?

7 What are the available classroom strategies for people who experience dyslexia?

8 What is the importance of assessment of dyslexia?

9 What is the impact of dyslexia on the social and emotional perspectives of dyslexics?

### 3.4 Participants

The subjects for this study are educational professionals; a speech therapist and nine teachers. Additionally, eight dyslexic children were involved in this research study. The participants of our research study are native speakers of the Arabic language, and they live in Adrar city. The investigator conducted interviews with a speech therapist at the clinic of Alhyat (Tililan), and nine teachers; three teachers from the primary school, three teachers from the middle school, and three teachers from the high school. The teachers from the three schools were chosen randomly; they are from different age and gender. The representation for such categories of the teachers is shown in **table 1**:

Teachers from the primary school	Teachers from the Middle School	Teachers from the High School
Teacher of Mathematics ( <b>Mr. B</b> )	Teacher of Literature ( <b>Mr. G</b> )	Teacher of Geography ( <b>Miss. M</b> )
Teacher of Literature ( <b>Mr. H</b> )	Teacher of Technology ( <b>Miss.L</b> )	Teacher of French ( <b>Miss.T</b> )
Teacher of French ( <b>Miss.T</b> )	Teacher of Physics ( <b>Miss. K</b> )	Teacher of English ( <b>Mr. D</b> )

**Table 1: Participant Teachers**

The eight children are from different gender and ages (between 8 to 13 years old) and of different levels of education. The dyslexic children have difficulties in writing and reading. Furthermore, they encounter problems in memory and sequencing. The data about the dyslexics were collected by the speech therapist, who was experienced in diagnosing and treating these dyslexic learners. The representation for such categories of dyslexic learners is shown in **table 2**:

<b>Dyslexic Learners</b>	<b>Age</b>	<b>Educational Level</b>	<b>Gender</b>
Soufiane	8	The primary school	Male
Ahmed	8	The primary school	Male
Akram	10	The primary school	Male
Achraf	10	The primary school	Male
Sami	9	The primary school	Male
Khadyja	11	The primary school	Female
Souhila	7	The primary school	Female
Abyr	13	The primary school	Female

**Table 2: The dyslexic Learners of the Research Study**

Three school districts were contacted for approval of staff to participate in the study; the participating school districts are considered large to medium, urban districts with relatively large numbers of staff in each school. The three schools are:

**The Primary School of Lotfi Alakyd****The Middle School Molay Hybaoui****The High School of Bilkin****3.5 Methods of Analyzing Data**

The process of qualitative data analysis is fundamentally a non-mathematical analytical procedure that involves examining the meaning of people's worlds and actions (Maycut and Morehouse, 1994, p30). Hence, the data analysis of the present research study will be mainly based on content analysis. Content analysis is a research method that has come into wide use in qualitative research although it can be used by quantitative researchers as well. Furthermore, content analysis can help qualitative researchers to summarize, analyze, and recognize the similarities and differences of a written text.

The researcher found that content analysis was the appropriate method for analyzing data. Content analysis helps qualitative researchers to identify themes, patterns, and describe situations. Researchers regard content analysis as a flexible method for analyzing textual data (Cavanagh, 1997, p.26). In addition, the specific type of content analysis approach chosen by a researcher varies with the theoretical and substantive interests of the researcher and the problem being studied (Weber, 1990,p.30)

**3.6 Ethics in Research**

Every research study should give great importance to the ethical problems that might come up during the process of data collection (Bulmer, 2001, p.20) The birth of modern research ethics began with a desire to protect human subjects involved in research projects. Research ethics provide guidelines for the responsible conduct of biomedical research.

Research ethics educates and monitors scientists conducting research to ensure a high ethical standard. (Helsinki, 2001, .15) Furthermore, the researcher should respect the subjects that take part in the study and try to protect their right to privacy by keeping their identity secret from the public eye (Bulmer, 2001, p.20)

Throughout all the stages of this study, the researcher strived to take into account the ethical guidelines for conducting the present research. That is to say, the researcher chose not to mention the names of the participants, but only the first names or the first letter of the participants' names are mentioned. Before each interview, the researcher emphasized the fact that the participant's name will not be revealed in the written form of the thesis. Barnes (2001) stated that

When someone is conducting a research project they should have in mind 'the need to strike a balance between society's desire, on the one hand, to expose the hidden processes at work in modern society and, on the other, to protect the privacy of the individuals and groups and to recognise that there are private spheres into which the social scientist may not, and perhaps should not, penetrate (p.99) .

### 3.7 Conclusion

This chapter represented the methodology that is used in the research study. Data collection instruments, participants, methods of analysing data, and ethics in research have been discussed in this chapter. The method that is used to collect data is the qualitative approach. Hence, a questionnaire, interview, and participant observation were used to collect data. The researcher did not want to limit the participants' responses, and it would be impossible to represent the experiences of the participants in numbers. Therefore, the researcher chose the content analysis to analyse the main findings of the research study. In the following chapter, the data collected from the questionnaire, interviews, and participant observation will be presented

# Chapter Four

## **The Findings**



## **4.1 Introduction**

The analysis section of this thesis is divided into five topics; the topics of the research study were drawn directly from the first research question of this thesis: “How can dyslexia have an influence on the dyslexic learner’s performance? The participants’ responses to the research question were mainly based on their personal impressions, understandings, and constructs of dyslexia. Accordingly, the researcher tried to evaluate the performance of a group of dyslexic learners, and tried to analyze the experiences and thoughts dyslexic learners, teachers, and speech therapists had about dyslexia. This chapter enabled the researcher to have a valuable first view into the experiences of the participants about dyslexia.

The interpretation of the data begins with the identifying of topics and patterns; and then; analyzing these topics and patterns. In some cases, words were taken directly from the text and in other case; words were the researcher’s interpretation of the participants’ responses. The researcher kept the original text of the participants intact in terms of spelling and grammar in order to reflect as much as possible the essence of the participants’ responses. This chapter will look at the similarities and differences between the participants’ responses and compare them with the current prominent theories and models of dyslexia.

## **4.2 Participants’ Definitions of Dyslexia and its Difficulties**

### **4.2.1 Dyslexia’s Definitions**

Understanding the definitions of dyslexia and its difficulties were the first and most important topics that emerged from the data. Accordingly, the first question examines how the participants define dyslexia.

There are many common perceptions about dyslexia which may be caused by confusion in terminology, lack of awareness, or many other things. The perspectives of the respondents about dyslexia differed somehow from the researcher's expectations.

*“Dyslexia is a learning disability that is concerned with reading and writing difficulties. Additionally, dyslexia is a developmental disorder, and it is usually discovered at an early stage of the primary school”.* **(The speech therapist)**

*“Dyslexia is the inability to read and understand the meaning of a given text or a passage.”* Teacher of Technology **(Miss.L)**

What **the speech therapist and the teacher of technology** (Miss.L) offer is an interesting personal description of dyslexia. The speech therapist is claiming that dyslexia is a specific learning disability in which students may struggle in reading and writing. The perception of the speech therapist is similar to the perception of Lyon et al. (2003) who stated that dyslexia has become widely accepted as a specific learning disability and has biological traits that differentiate it from other learning disabilities. The perceptions of the speech therapist indicate that dyslexia is commonly considered as a specific learning disability.

The Language used by **the speech therapist and the teacher of technology** (Miss.L) to describe dyslexia included ‘*disability*’ and ‘*inability*’. This language is more usually found in definitions espoused by psychologists. The present study has not considered researching the language used by participants to describe dyslexia as it was not part of its aims and objectives.

Based on the various definitions of dyslexia, we found that the respondents connected dyslexia with the ‘difficulties’ in the learning process. **The teacher of physics** (Miss. K) and the **teacher of literature** (Mr. G) supported the terminology used by **the speech therapist and the teacher of technology** (Miss.L) when they suggested that:

*“Dyslexia is a **learning difficulty** to read and to write.”* **The teacher of physics**  
(Miss. K)

*“Dyslexia is the **inability** to read, to spell, to understand, and to memorize the letters.”*  
**The Teacher of literature** (Mr. G)

Sometimes, the terminology of the participants to define dyslexia offers an interesting insight into their understanding and perception of dyslexia. The researcher noticed that one of the participants (Mr. B.) of this study believed that dyslexia is associated with psychological problems.

*“Dyslexia is the **inability** to read simple texts, and it is related to **psychological problems.**”* Teacher of Mathematics (**Mr. B**)

The researcher also noticed that Mr. D. stated that dyslexia is related to an ‘imperfect ability’ to listen, think, speak, read, or write. It would be interesting to understand the basis for this assertion; however, Mr. D. was unable to say more on this issue:

*“Dyslexia is involved with the **understanding** or **using language** spoken or written.”* *The* Teacher of English (**Mr. D**)

The remarkable point in the above quote is that the teacher of English did not describe dyslexia as a disability or an inability. He just said that dyslexia is associated with an understanding or using language.

By looking at the answers of the participants, the researcher found that all the participants connected dyslexia with a learning disability or learning difficulty, and more specifically, dyslexia is the ability to read and write. In other words, dyslexia is referred to as a specific learning disability by some and as a reading disability by others. Furthermore, the researcher noticed that the terminology used by the participants is rooted in the language of the medical model of disability, such as disability, inability, and psychological problems.

#### **4.2.2 Dyslexia's Difficulties**

Dyslexia is characterized by difficulties with fluent word recognition, poor spelling, and decoding abilities. These difficulties typically result from a deficit in the phonological component of language.

By interpreting the responses of participants and participant observation, the researcher found that the difficulties of dyslexia can be classified as the following:

##### **4.2.2.4 Reading, Writing, Spelling, and Memory**

*“From my point of view, dyslexia has a close relationship with reading, spelling, writing, and memory. People who experience dyslexia write sentences in the wrong order. In addition, dyslexic learners find difficulties in reading what they write, especially with the letters that have the same spelling, such as ‘p’ and ‘q’, ‘b’ and ‘d’. dyslexia can have an impact on the memory of dyslexics in term of remembering information for exams, names, and instructions to write sentences” (The speech therapist)*

The researcher found that the speech therapist described her understanding of dyslexia and offered an additional level of complexity. She stated that dyslexia is not only concerned with ‘writing and reading problems’, but also with ‘memory’. The reading and writing difficulties are noticeable when the dyslexic learners are asked to read or to write. The speech therapist believed that the difficulties of memory can be noticed when the teacher asks a dyslexic learner about their names; dyslexic learners have a problem in remembering information. Thus, the researcher concluded that dyslexia can have an influence on the memory of a dyslexic learner.

### **4.3 What are the Characteristics of Dyslexia?**

The second topic of the research study was concerned with the characteristics of dyslexia. Based on the participants' responses and participant observation, the researcher found that the characteristics of dyslexia can be summarized as following:

#### **4.3.1 Characteristics of Dyslexia in the Primary School**

*“Dyslexic children have troubles in learning numbers, days of the week, colors, shapes, and spelling their own names. **The characteristics of dyslexia can be related to anxiety, stress, lack of confidence, tiredness, frustration, and irritable.**” (The speech therapist)*

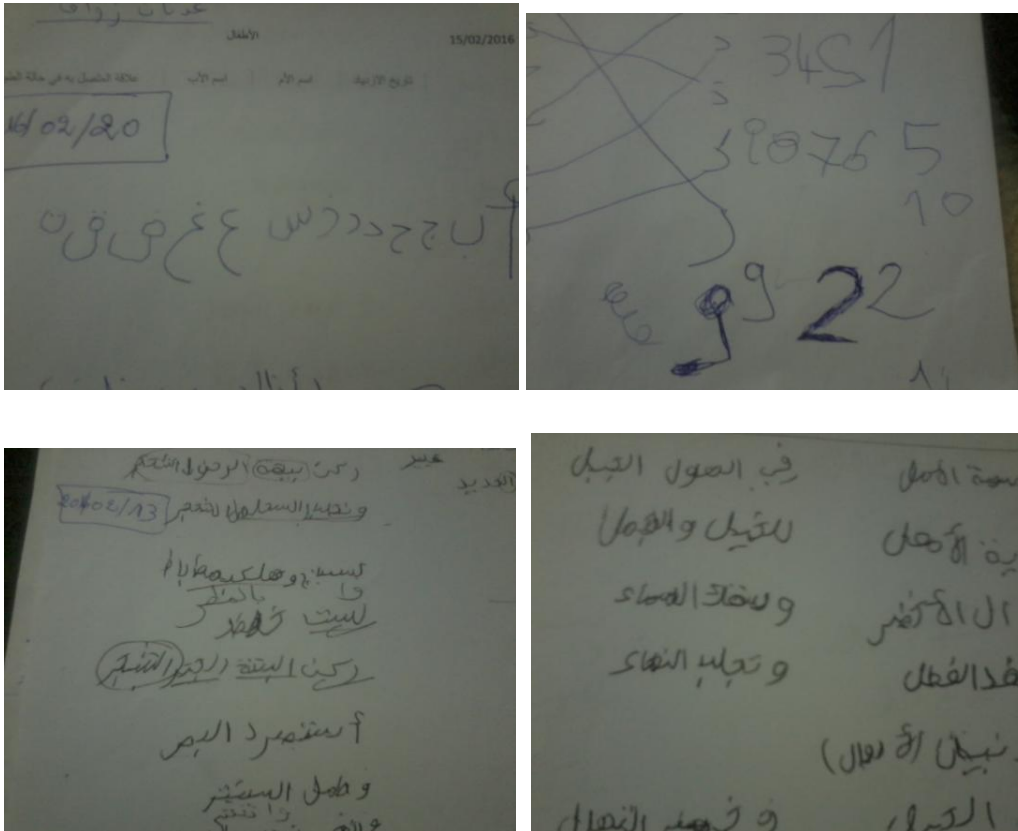
*“Dyslexic students have difficulty in learning new words and they have a smaller vocabulary than other kids the same age.” **Teacher of mathematics (Mr. B)***

By looking at the perceptions of **the speech therapist and Mr. B**, the researcher noticed that both of the participants agree that dyslexic learners find difficulties in 'learning things' such as new words, numbers, days of the week, colors, shapes, spelling, and their own names. The differences between the two perceptions can be noticed as following:

-The speech therapist argues that dyslexic learners find difficulties in learning numbers, days of the week, and their names.

-Mr. B believes that the characteristics of dyslexia are concerned with troubles in learning new vocabulary.

Both professionals seem to be saying that dyslexic children do not find it easy to learn anything new at the beginning of their learning process. By analyzing the participant observation of the dyslexic learners, the researcher observed that the explanations of the speech therapist and Mr. B. can be illustrated with what the dyslexic learners wrote in the student's work below.



What is also note-worthy here is that the speech therapist is describing her understanding and experience of the characteristics of dyslexia in term of the phonological awareness:

***“The issue of phonological awareness becomes noticeable when the dyslexic students start reading. Dyslexic learners find difficulties in recognizing phonemes; they are not able to differentiate between words that share the same sounds.” (The speech therapist)***

The speech therapist claimed that the deficits of the phonological awareness can be noticed when the teacher asks a dyslexic learner to read .Based on the explanation that the speech therapist stated above, the researcher observed that dyslexia can have an influence on the phonological awareness of dyslexics . Phonological awareness is defined as the ability to identify and manipulate the sounds in words; hence, phonological awareness can help learners to understand the order of the letters and the differences

between them. For example, the learner should know that if the letter ‘p’ in ‘pat’ is changed to an ‘s’, the word becomes ‘sat’. Therefore, the researcher concluded that dyslexic children have difficulties in recognizing the difference between letters. This point is illustrated with what **Miss. L** mentioned :

*“Dyslexics in the primary school have trouble in recognizing the letters of the alphabet, and they have difficulty blending sounds into words, such as connecting C-H-A-T to the word ‘chat’.”* **Teacher of technology** (Miss.L)

The researcher observed that phonological awareness can be a reliable marker of dyslexia because dyslexic learners may read are not able to recognize the phonemes of the words. By looking at the participant observation, the researcher found that dyslexic learners cannot differentiate between ‘ha’ kha’ and ‘j’. For example, when the researcher asked the dyslexic learners to write ‘ha’ they were confused , and they could not know which one should be written.

**The teacher of French** (Mr. D) stated that children who experience dyslexia have ‘mispronunciations of letters and words’. They are also ‘lazy in reading texts’, and they also have ‘poor auditory memory’ for learning nursery rhymes and chants. The perspective of **Mr. D** is similar to what **Nicola (2009)** stated about the characteristics of dyslexia : “...difficulty learning nursery rhymes, and providing rhymes for simple words such as cat or door...”

#### **4.3.2 Characteristics of Dyslexia in the middle School**

The researcher could not collect more data about the characteristics of dyslexia in the middle school. Therefore, a small number of participants offered an alternative understanding of the characteristics of dyslexia:

*“Dyslexic learners have a **lack of concentration**,... and they usually **repeat words more than once**. Those dyslexic students have **trouble in learning new skills and rely***

*heavily on memorization and they have trouble in following a sequence of directions” (The speech therapist )*

*“People who experience dyslexia confuse the order of letters, such as writing “b” instead of “d”, and they have trouble in remembering facts and numbers .In addition, their written work is usually understandable” Teacher of literature (Mr. H)*

Looking at the above responses and recognizing the similarities and differences between the respondents’ responses, the following findings have been determined :

Both of **the speech therapist and the teacher of literature (Mr. H)** believed that ‘dyslexia can have an influence on the memory of the dyslexic learner’. By looking at the differences between the **speech therapist’d and Mr. H’s responses**, the researcher found that the perception of the speech therapist focused on ‘a lack of concentration, word repetition, extensive memorization, and following a sequence of directions’. Yet, the perception of Mr.H emphasized on ‘ordering of letters’ , ‘remembering numbers and facts’, and ‘understandable written work’. Some teachers reaffirmed that ‘dyslexic learners read slowly and they consume a lot of time to read words’. Ultimately, it can be concluded that dyslexic learners in the middle school ‘may have untidy handwriting, bizarre and inconsistent spelling’. Hence, (based on what professionals said) dyslexics ‘may be slower at completing their academic assignments than their non-dyslexic peers’.

#### **Characteristics of Dyslexia in the high school**

By depending on all the responses of the participants’ perceptions from the high school , the research found that:

- Dyslexic learners might have **poor time management, memory and organizational skills.**
- Dyslexic students **confuse words or miss them out.**



- People who experience dyslexia **may write very quickly** in an attempt to **write down their thoughts before they lose them.**
  
- Dyslexic learners also have **difficulties in structuring and organizing** their ideas in writing; hence, they have **difficulty making sense of what they write.**
  
- The important characteristics which affect writing skills **are short-term memory and visual processing.**
  
- Learners who are dyslexic **encounter problems in remembering information,** such as mathematical formulae, poetry, and foreign language vocabulary.
  
- It may also be difficult for them to **remember what they have read.** People who experience dyslexia **avoid reading out loud** when teachers ask them to read.
  
- Dyslexic students **cannot differentiate between some letters,** such as “d” and “b” “p” and “q” “m” and “w”.
  
- Dyslexic learners have **difficulty in learning a foreign**

#### **4.4 The Performance of Dyslexic Learners in the Classroom**

‘If a child does not learn the way you teach then teach him the way he learns.’  
(Chinn and Ashcroft, 1999, p.126. ) Finding more effective teaching and learning strategies for students with dyslexia can be considered as a challenge to teachers. Therefore, the next topic that emerged from the collected data is the learning styles teaching strategies of dyslexics. By depending on the perspectives of the participants, the researcher found that teachers believe that dyslexic should choose a learning style that fits them to learn. Furthermore, the speech therapist and teachers think that teaching

strategies may help dyslexic learners to be improved. In addition, the participants agree that the classroom strategies can be considered as a good environment for dyslexic learners.

By depending on the participant's responses, the researcher found that:

- Visual dyslexic learners **learn better by sight.**
- Auditory dyslexic learners **learn better by hearing.**
- Tactile learners' dyslexic (kinesthetic) **learn better by touch.**

*“Dyslexic learners are mostly based on their **classmates to correct their mistakes.**”*

#### **Teacher of French (Miss.T)**

**Miss. T** makes a significant observation when she suggests that dyslexic learners mainly depend on their classmates to correct their mistakes. The researcher observed that the perspective of Miss. T indicates that dyslexic learners may learn better through correcting their mistakes. Thus, what Miss T. suggested can be a learning style for dyslexics.

The participants were also asked about the relationship between teaching styles and dyslexics. The table 4 includes the perspectives of the respondents about the teaching styles that should be used to teach dyslexics:

<p><i>“Teachers should focus on the language aspects of the dyslexic learners. In addition, teachers should be aware of the barriers to learning experienced by dyslexic learners.” (The speech therapist)</i></p>	<p><i>“Learners who experience dyslexia should have the make up sessions, which help the dyslexic learners to retrieve more knowledge and information. There should be also a contact between teachers and the parents of the dyslexic students”</i> <b>Teacher of Literature (Mr. G)</b></p>	<p><i>“The dyslexic learners should be kept in the front of the board, and teachers should give enough time to dyslexic learners. Teachers should not ignore those students who have dyslexia; they should be involved in the activities of the classroom”</i> <b>Teacher of Geography (Miss. M)</b></p>
<p><i>“Teachers have to use modern methods in teaching, and teachers should repeat what they say.”</i> <b>Teacher of Technology (Miss.L)</b></p>	<p><i>“Teachers have to reward dyslexic learners when they answer correctly; this strategy may keep dyslexics to learn to read. Furthermore, teachers have to know the difficulties of each dyslexic learner.”</i> <b>Teacher of French (Miss.T)</b></p>	<p><i>“Teachers have to simplify the complicated words to make it clear for the dyslexic learners. Teachers have to teach dyslexic learners the right spelling of words.”</i> <b>Teacher of English (Mr. D)</b></p>

**Table 4. Responses of Participants about Learning Strategies**

What is shown on table 4 indicates that most participants are aware at least of the teaching strategies of the dyslexic learners. The researcher remarked that the issue of supporting learners with dyslexia in their attempts to overcome reading and spelling can be helpful for teachers and dyslexic learners to be improved. The researcher observed **that the speech therapist** and the **teacher of French (Miss.T)** suggested that teachers have to know the difficulties that dyslexic learners encounter. By looking at the differences between the two responses, we found that:

The speech therapist mentioned that teachers have to focus on the language aspects of their dyslexic learners while the teacher of French suggested that teachers have to reward the dyslexic learners for the right responses. An important point raised by the thoughts of the French teacher was that parents and teachers should be involved in helping the dyslexic student.

The researcher concluded that if teachers give rewards to their dyslexic learners, then this may help the dyslexic learners to be motivated to learn and to be improved in their performance.

By looking to what **teacher of Technology (Miss.L) and the teacher of English (Mr. D) stated**, it can be concluded that learners have a hard time in learning to read through the conventional methods. The conventional method may be related to the memorization of every new word that learners come across, and they have to remember those words. learners who experience dyslexia are not able to remember each word they learn. Consequently, teachers have to create modern methods that can help dyslexic learners to learn better.

By interpreting the data similarities emerged between what the **teacher of Technology (Miss.L) and the teacher of English (Mr. D)** mentioned, the researcher found that both

of them agree that teachers have to simplify the complex information to be understood by the dyslexic learners.

Based on what the **teacher of Literature (Mr. G) and the teacher of Geography (Miss. M)** stated, the researcher noticed that the respondent's responses can be considered as recommendations to teach people who experience dyslexia.

The similarities between the perceptions of the two teachers can be summarised as following:

- The make up sessions can help learners to understand lectures better.
- A contact between parents and teachers can help in identifying the difficulties of dyslexic learners.
- Sitting the dyslexic learners closer to the board may give them an opportunity to gain knowledge and information.
- Involving learners who experience dyslexia within the activities can help them to improve.

The researcher concluded that dyslexia is a condition that demands teachers to use specific teaching methods. So, identifying learning styles and teaching strategies is important for both teachers and dyslexic learners as well.

### **Classroom Strategies**

How can classroom teachers assist students with this learning disability and how can teachers involve dyslexic learners within the classroom environment?

Classroom strategies are another important topic that emerged from the collected data.

*“The classroom environment should be provided with **bright light and silence.** Teachers have to create a comfortable environment for the dyslexics because **the***

*classroom is often the most stressful environment for a dyslexic person.*” (The speech therapist)

That is to say those dyslexic learners may find it hard to filter out background noise and will they need a quiet environment when trying to concentrate on challenging tasks. Thus, teachers who understand dyslexia are able to use different strategies to help learners succeed.

#### **4.5 Social and Emotional Perspectives of Dyslexia**

The next topic that emerged from the data is the social and emotional perspectives of dyslexia on the dyslexic learners.

*“Dyslexic learners will feel depressed and frustrated.”* **Teacher of Mathematics (Mr. B)**

Generally dyslexia is regarded as a ‘common’ learning disability in many schools; it is a **cause of stress and concern** for students and teachers.

*“Dyslexic learners have difficulty in social situations because they have negative seen about themselves.”* (The speech therapist)

What the speech therapist stated is an interesting remark about the social and emotional perfectives of dyslexia. Dyslexia can have an influence on the social life with people who experience it. We found this is a similar view to the teacher of literature, in that low self-esteem will cause the development of a negative and poor self-image for people who experience dyslexia. The Literature teacher also commented on the learners views of not just their present but the future.

*“People who experience dyslexia have negative thoughts about themselves, and they do not have positive things about the future.”* **Teacher of Literature (Mr. H)**

#### **4.6 Assessment of Dyslexia**

The title of this section emerged as a topic but was not taken directly from the data.

The researcher remarked that most of the participants agreed that assessments of dyslexia can help educators to know the difficulties of dyslexic learners. The speech therapist believed that assessments are crucial to recognize dyslexics from non-dyslexics.

*“Assessment of dyslexia is important to know whether a person has dyslexia or not. Mostly, speech therapists use some tests to evaluate the performance of the dyslexic learner. These tests may include: breath tests, timing the mouth area tests, focus tests, spoken language Battery, colours tests, language writing, and oral language assessment (ELO)” (The speech therapist)*

It is essential for dyslexic learners to have assessment to know:

- **A learner actually has dyslexia.**
- The **difficulties** that dyslexic learners encounter.
- How those **difficulties** affect the particular studies of dyslexics.
- What **support** and would be **appropriate** for dyslexic learners.

#### **4.7 Conclusion**

The participants of this study described dyslexia by depending on their personal interpretations and experiences. Some of them stated that dyslexia is a learning disability while others describe dyslexia as an inability to read. The majority of the interviewees agree that the characteristics of dyslexia can be seen in learning things such as new words, numbers, and days of the week, colors, shapes, spelling, and writing. Additionally, the speech therapist reclaimed that dyslexia can have a close relationship with the

phonological awareness of the learner. The majority of the participants argued that knowing the learning styles of dyslexic learners, teaching strategies, and classroom strategies will help dyslexic learners to learn better. Most of the participants believed that dyslexia can have an influence on the social life of the people who experience dyslexia. The emotional effects of dyslexia were expressed by the speech therapist; frustration, anger and anxiety are always related to low-self-esteem. Most dyslexic students go to schools without knowing that they are dyslexic. Hence, assessments of dyslexia can be a good strategy to know whether a learner is dyslexic or not. The speech therapist illustrated this point by stating that speech therapists use breath tests, timing the mouth area tests, focus tests, spoken language battery, colours tests, language writing, and oral language assessment (ELO) to evaluate the performance of the dyslexic learners. Eventually, if dyslexic learners are not diagnosed at an early stage, this will have an impact on their performance.



## **General Conclusion**

Even after a century of research, dyslexia is still one of the most controversial topics in the field of developmental neurology, psychology, and education because dyslexia is often referred to as an ambiguous and an invisible disability. Amongst the researchers, there is a little agreement on the definitions, causes, and characteristics of dyslexia. Yet, over the last decade, the scientific research on dyslexia has made significant advances in the issue of dyslexia.

## **Results**

Several conclusions can be drawn from our findings, which agree with the outcomes of previous studies on dyslexia. Firstly, the data from the research study indicate that dyslexia involves an unexpected difficulty in learning to read and to write, and it is related to phonological deficits. The majority of the participants described dyslexia in terms of negative difference and deficit. Some participants describe dyslexia as a learning disability whilst other participants describe dyslexia as an inability to read. One participant stated that dyslexia is related to psychological problems.

Secondly dyslexic learners fail to master the basics of reading and writing at the beginning of the primary school, and they have poor auditory memory for learning nursery rhymes, chants, numbers, days of the week, colors, shapes, and spelling their own names. At middle school, dyslexic learners may have untidy handwriting, bizarre and inconsistent spelling. The results of this study have shown that dyslexics fail to achieve the expected level at the secondary school; in addition, they have difficulties in structuring and organizing their ideas in writing; hence, they have difficulty in making sense of what they write. Additionally, the speech therapist reclaimed that dyslexia can have a close relationship with the phonological awareness of the learner. Dyslexic learners may read 'p' as 'q', and 'm' as 'w'.

Thirdly, based on the results of the participant's responses, it has been concluded that knowing the learning styles of dyslexic learners, teaching strategies, and classroom strategies will help dyslexic learners to be improved in their learning process.

Another finding that emerged from the research study is that dyslexia can have social and emotional impacts on dyslexic students. The researcher concluded that low self-esteem will cause the development of negative and poor self-image for people who experience dyslexia.

### **The Limitations of the Study**

The limitations of this study include the following:

1 The research study was concerned only with dyslexic children. The investigator thought that it would be interesting if adult dyslexic learners were included in the research too.

2 There is an existing lack of awareness and significant misperceptions about dyslexia among teachers and educators.

3 The informants do not speak the English language; hence, all the questions of the interviews were asked in Arabic then translated into the English. Translation is not an easy task to do. The researcher encountered a lot of troubles and difficulties in translating the participants' responses.

4 The poor response may be due the lack of information and knowledge

Eventually, our research paper focused only how dyslexia can have an impact on the learner's performance. Thus, it would be an interesting future challenge to continue this research by doing research study on how dyslexia can be diagnosed.

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## Appendix 1

### Questions for the Speech Therapist and Teachers

1 How can dyslexia be defined in general?

-Learning disability

-An inability to read

-An inability to read what is written

2- How do you define dyslexia from your point of view?

.....  
 .....

2 What are the characteristics of dyslexia?

Poor auditory memory

Trouble in learning numbers

Reading texts

Lack of confidence

Reading new vocabulary

Troubles in following directions

3 Do dyslexic learners have difficulties in phonological awareness?

Yes

No

Dyslexic learners have difficulties in :

	<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Always</b>
<b>Reading</b>					
<b>Spelling</b>					
<b>Writing</b>					
<b>Memory</b>					
<b>Following Instructions</b>					

5 What are the learning styles of learners who have dyslexia?

.....  
 .....

Dyslexic learners learn better by:

Sight

Hearing

Touch

6 What are the appropriate teaching strategies for dyslexics?



.....  
.....

7 What are the available classroom strategies for people who experience dyslexia?

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.....

8 What is the importance of assessment of dyslexia?

.....  
.....

9 Does dyslexia have an impact on the social life of the people who experience dyslexia?

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.....  
.....

## الاستبيان الخاص بالارطفونيين و المعلمين و الأساتذة

موضوع الدراسة : تأثير عسر القراءة (الديسليكسيا) على أداء المتعلم

### الأسئلة

س1 ما هو التعريف الإجمالي لعسر القراءة كنظرة عامة؟

- صعوبة تعلم القراءة
- عدم القدرة على القراءة الصحيحة
- نقص في قدرات التعرف على الكلمات المكتوبة
- صعوبة استيعاب ما يقرأ

س2 ما هي الفكرة التي لديك حول عسر القراءة كنظرة خاصة؟

.....

.....

.....

س3 أهم أعراض المعسر قرائيا هي انه :

- لا يستطيع قراءة الكلمات كاملة
- يتعب عندما يقرأ فقرة كاملة من النص
- يبطن في قراءته الصامتة
- يرفض القراءة عندما يطلب منه المعلم ذلك
- لا يستطيع تتبع الكلمات في السطور عندما يقرأ زملائه
- لا يميز بين الحروف المتشابهة لفظا و المختلفة كتابة مثل 'جليد' أو 'جديد'
- يحذف كلمات أثناء القراءة الجهرية
- يضيف كلمات أثناء القراءة
- يبدل كلمات بأخرى أثناء القراءة الجهرية
- يعيد قراءة الكلمة أكثر من مرة
- يقلب حروفا أثناء القراءة الجهرية مثل حرب بدل من بحر
- لا يتعرف بسهولة على الكلمة أثناء قراءتها

س4 ما هي مؤشرات عسر القراءة عند التلاميذ المعسررين قرائيا؟

.....

.....

س5 ما هي أساليب التعلم التي يتبعها المعسررين قرائيا؟

.....

.....

س6 على أي طريقة يعتمد المعسررين قرائيا ؟

التعلم عن طريق الرؤية

التعلم عن طريق السمع

التعلم عن طريق اللمس

س7 هل يجد المعسررين قرائيا صعوبة في :

	أبدا	نادرا	أحيانا	غالبا	دائما
القراءة					
الكتابة					
الحفظ					
الحساب					
أداء واجباتهم المنزلية					
تحديد الاتجاهات					
إتباع الأوامر و التوجيهات					
تحديد الالوان					

س 8 ما هي الطريقة التي تراها مناسبة لتدريس المعسرين قرائيا؟

.....

.....

س9 كنظرة خاصة, ما هي طريقة التعامل اللازمة مع المعسرين قرائيا؟

.....

.....

.....

س 10 كيف يجب أن تكون وضعية القسم خلال عملية التدريس؟

.....

.....

س11 كيف يمكن لعسر القراءة ان يكون لها تأثير على السلوك النفسي و الحياة الاجتماعية للطفل؟

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.....

س12 ضع علامة + أمام الإجابة المختارة, يجد المعسر قرائيا صعوبة في

أبدا	نادرا	أحيانا	غالبا	دائما	
					تقسيم الجمل إلى كلمات
					تقسيم الكلمات إلى مقاطع
					القدرة على التهجئة

س13 ما هي أهمية التدخل العلاجي في حالات العسر القرائي؟

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.....  
.....

س14 ما هي الحلول المقترحة؟

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.....  
.....  
.....  
.....

شكرا لكم