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Developmental Dyslexia and EFL Secondary Teachers in Barcelona

Master Thesis

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“When he is determined, who can resist him? When he wants to do something, he does it.”
(Job 23:13)

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Abstract

The International Dyslexia Association indicates that 1 in 10 children are likely to be affected by dyslexia (International Dyslexia Association, 2022). However, research in Spain estimates that that number is doubled with approximately one in five children experiencing significant symptoms of this language-based learning difficulties often categorised as dyslexia (Jiménez, Gúzman, Rodríguez, & Artiles, 2009). These numbers accentuate not only the strong prevalence of dyslexia, but also the need for taking it into account and dealing with it within the educational context. Nonetheless, a literature review of the topic reveals that there is lack of studies concerning the knowledge of EFL High School teachers in Barcelona about dyslexia and the strategies and interventions they employ. Thus, the purpose of this paper is to address this issue by shedding light on its nature in consideration of the definitions it has received throughout time, its typologies, causes, symptoms, diagnoses and strategies to remediate the challenges faced by students with these language-based learning difficulties in EFL classrooms. It also investigates the current situation by considering what secondary school teachers in Barcelona know and do regarding dyslexia in EFL classrooms using mixed-method research. A questionnaire was sent to 240 schools and organisations around Barcelona. 28 responses were received and analysed. Study results indicate that although a high number of EFL Secondary Teachers in Barcelona have not had any special training, they are aware of this language-based learning difficulty and the needs of dyslexic learners. In addition, three frequently known and applied strategies and interventions were identified as being commonly used in the classroom relating directly to time flexibility, organisation and facilitating written tasks. Nonetheless, this paper concludes that further training is needed.

Keywords: Dyslexia, SEN, EFL Classroom, Secondary Education, ESO, Language Teaching, Diversity and Inclusion

Resum

L'Associació Internacional de Dislèxia indica que 1 de cada 10 nens tenen la possibilitat de ser afectats per dislèxia (Associació Internacional de Dislèxia, 2022). No obstant això, recerques a Espanya estimen que aquest nombre es duplica amb aproximadament 1 de cada 5 nens (Jiménez, Gúzman, Rodríguez, Artiles, 2009). Aquestes approximacions accentuen no sols la forta prevalença de la dislèxia, sinó també la necessitat de tenir-la en compte i tractar-la dins del context educatiu. Tot i això, una revisió literària del tema revela que hi ha falta d'estudis sobre el coneixement dels docents d'anglès com a llengua estrangera a Barcelona sobre la dislèxia i les estratègies i intervencions que emprenen. Així, el propòsit d'aquest document és abordar aquesta qüestió llançant llum sobre la seva naturalesa en consideració de les definicions que ha rebut al llarg del temps, les seves tipologies, causes, símptomes, diagnòstics i estratègies per a remeiar els reptes als quals s'enfronten els estudiants amb aquestes dificultats d'aprenentatge en l'aprenentatge d'anglès com a llengua estrangera. A més, investiga la situació actual considerant el que els professors d'escola secundària de Barcelona saben i fan respecte a la dislèxia mitjançant el mètode mixte. Es va enviar un qüestionari a 240 escoles i organitzacions al voltant de Barcelona. Aquest qüestionari va rebre 28 respostes que s'havia analitzat. Els resultats de l'estudi indiquen que, encara que un gran nombre de professors de secundària a Barcelona no han tingut cap formació especial, són conscients d'aquesta dificultat d'aprenentatge basat en la llengua i les necessitats dels estudiants dislèxics. A més, tres estratègies i intervencions sovint conegudes i aplicades es van identificar com aquelles que estan relacionades directament amb la flexibilitat del temps, l'organització i facilitar les tasques escrites. No obstant això, aquest document conclou que es necessita més formació.

Paraules clau: Dislèxia, NESE, Anglès com a Segona Llengua, ESO, Ensenyament de Llengües, Diversat i inclusió

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1. Introduction

Foreign language learning bears numerous benefits to students that go beyond the single aspect of learning a language. These benefits include such features as the possibility to broaden their knowledge of the world, improve their intercultural awareness, and achieve an extended range of employment and recreational opportunities. These advantages are some of the factors that led Eurostat (2019) to encourage EU countries, such as Spain, to incorporate a Second Language curriculum. These same benefits are what the Spanish and Catalan Departments of Education are aiming to achieve with the incorporation of a foreign language curriculum in their educational systems. As explained in *The Language Model of the Catalan Education System* [1]

> the mastery of linguistic and communicative competence, constructed based on interrelations and interaction between different languages, should be considered as a cognitive instrument which facilitates access to and the creation of knowledge, as a means of taking action in international spheres and participating in digital environments; and as a strategy to facilitate access to the labour and cultural market of today's world. […] The Catalan language model presents plurilingual education as something more than the teaching and learning of different languages. This approach means that all languages, both curricular and native, contribute to the development of each student's communicative skills, meaning that they can use them to gain knowledge and achieve effective communication in different languages as well as in different situations and circumstances.

Nonetheless, the promotion of foreign language learning does not only bring favourable outcomes but also presents challenges to both language learners with specific educational needs (SEN) such as dyslexia and language teachers. According to the International Dyslexia Association (IDA), dyslexia affects 1 in 10 individuals, many of whom remain undiagnosed and receive little or no intervention services. In the Spanish context, this estimation is overshadowed, as the prevalence of developmental dyslexia is estimated between 3.2% and 5.9%, respectively to the definition used, (Jiménez, Gúzman, Rodríguez, & Artiles, 2009) implying that approximately one in five children will likely experience significant symptoms of this language-based learning difficulty. Dyslexia presents numerous challenges for students affected by it not only in their native languages but also when learning a second language such as English which has many distinguishing characteristics compared to the Spanish and Catalan language (Kormos, 2017; Kormos & Smith, 2012; Nijakowska, 2010; Peter and Reid, 2016; Schnieder and Crombie, 2003; Sparks, Patton Ganschow, Humbac & Javorsky, 2006 as cited in Kormos & Nijakowska, 2017, p. 31). This difference in processing could result in demotivation and subsequent behavioural problems once inclusive practices from schools are not provided. Furthermore, dyslexic students also often feel that they are unable to fulfil high school and college foreign language requirements (Cohen, 1983; Ganschow and Sparks, 1993; Ganschow, Sparks and Schneider, 1995; Pompian and Thum, 1988 as cited in Simon, 200, p. 156).

Furthermore, the challenges each dyslexic student shows induce some changes, modifications and adjustments for language teachers to address the needs of these individuals. Crombie (2003), for

[1] A downloadable copy is available in the following link: https://educacio.gencat.cat/web/.content/home/departament/publicacions/monografies/model-linguistic/model-linguistic-Catalunya-ENG.pdf

instance, considers dyslexia a teaching challenge, as this would mean that the teacher will not only have to bear in mind the typical classroom issues such as motivation, attitude, learning style, self-esteem and determination that are always crucial to learning, but also the specific strategies and the correct choice of the most effective methods of teaching foreign languages to dyslexic pupils to facilitate these students' SL process. (Crombie, 2003, p. 2,3). For this reason, Kormos and Nijakowska (2017) and others advocate that well-designed initial training and continuous professional development opportunities for language teachers should be provided for language teachers (Kormos & Nijakowska, 2017, p. 31; Ferrer & Bengoa, 2014, p. 206; Nijakowska, 2020, p. 263). This practical instruction ought to be aimed at preparing teachers for working in inclusive classrooms, enhancing their knowledge and skills, boosting their self-efficacy beliefs and developing and sustaining positive attitudes (Kormos & Nijakowska, 2017, p. 30, 31). They recommend that special courses should be incorporated into pre- and in-service language teacher training (Ibid).

Nevertheless, many educational systems and language education schemes offer what Kormos and Nijakowska (2017) identify as "scant" initial training and continuous professional development opportunities (Kormos & Nijakowska, 2017, p. 31; Ahmad et al., 2018, p. 2177). This insufficient and often inadequate initial training subsequently results in the limited knowledge of FLA teachers about inclusive practises and effective intervention programmes (Joshi et al., 2009 and Goldfus, 2012 as cited in Kormos and Nijakowska, 2017, p. 31), which, as previously mentioned, are crucial to accommodate the needs of the dyslexic students in the EFL classrooms (Nijakowska et al., 2018).

In the Spanish/Catalan context, few studies have been carried out on the preparation of Secondary (language) teachers with respect to dyslexia, and how conscious they are of the nature of this language-based learning difficulty and its intricacies. Moreover, even though numerous handbooks are written on the teaching strategies and interventions to address the needs of dyslexic learners, no survey has been done to examine how these suggested interventions have been employed by the teachers and the effectiveness of each. Finally, in the Master's degree devoted to preparing students to become Secondary teachers, very little information is provided to facilitate the learning process of dyslexic students. This scarcity of research and initial training are what motivated this study based on the following three questions: (1) How much do EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it? (2) What are the most and least common strategies, if any, that they use to assist dyslexic learners? (3) What do Foreign Language teachers in Barcelona Spain think about the need to implement specialized Teacher training about Dyslexia? Therefore, it is one of the goals of this paper to contribute to this underinvestigated area of research by trying to find answers for these unanswered questions.

2. What is Dyslexia?

The past decade has seen numerous studies focused on dyslexia with many published papers aiming to have a better and clearer understanding of this term. Scholars from different scientific fields have become deeply engaged in endeavouring to define the word dyslexia taking the viewpoint of their field of studies. Whereas others focus on trying to shed light on the causes and symptoms of this term putting emphasis on the importance of its early identification to address the needs of the individuals subjected to it. Furthermore, due to its very complex nature, some researchers attempted to analyse and describe the different types of dyslexia together with their subtypes ending their papers highlighting all their

theoretical, clinical, and educational implications. This paper intends to add to existing literature by exploring the most recent and relevant studies on dyslexia beginning with the multiple definitions this term has received, followed by the causes, symptoms and diagnosis and finally, provide a summarized version of developmental dyslexia's subtypes.

2.1 Developmental Dyslexia—Definition(s)

Defining dyslexia is not an easy task, as, since the first publication of research papers about this term, it has received several definitions across professional and geographical contexts depending on the perception and approaches they adhere to (Nijakowkska, 2020, p. 259; Kálmos, 2011, pp. 4-5). For example, it is believed that by the end of the 20th century, each of the various research fields that participated in the attempt to discover more things about dyslexia had its own conceptualisation of what dyslexia is (Kálmos, 2011, p. 5). As a consequence, instead of endeavouring to have a concrete and sole definition of dyslexia, this paper will revisit some of the widely accepted definitions throughout the history of this term and attempt to clarify the distinguishing characteristics each definition has. Furthermore, the definitions mentioned herein are based on five approaches that are believed to have more relevance to the main objective of this work and these are the biological approach, neurological approach, cognitive approach and educational and environmental approach.

Studies of dyslexia can be traced back to Britain in 1884 when researchers were encouraged to increase and improve scientific knowledge resulting in the publication of numerous papers and journals (Gayán, p. 7). One particular case study by ophthalmologist Pringle Morgan focused on a young boy who found it impossible to learn to read, despite having apparently very high oral and non-verbal intelligence and a new term, *congenital word blindness*, was then coined by the same researcher—a term that would be later labelled as developmental dyslexia (Gayán, 7; Stein, 2018, p. 1; Leciejewska, 2012, p. 22). Since then, developmental dyslexia is widely known as a disease of the visual system (Gayán, 7; Stein, 2018, p.1) and for being labelled as a disease, children subjected to it were typically ascribed in schools as students with low IQ or underdeveloped mental capacities (Kálmos, 2011, p. 4).

The notion of defining dyslexia as a disease prevailed until the early-mid 20th century when researchers "took dyslexics' reading difficulties as their starting point and sought the core cause of the reading difficulties at a biological or neurological level" (Kálmos, 2011, p. 4). These biological and neurological approaches define dyslexia together with the assumption made by the fore researchers; thus, dyslexia is considered as dysfunctions related to visual memory déficits, brain hemisphere dominance and even faulty guidance of seeing mechanisms (Hinselwood, 1917; Orton, 1928; Dearborn and Leverett, 1945 as cited in Kálmos, 2011).

Nevertheless, during the 1960s and 1970s, many other scientific approaches started to gain more ground in several academic fields. One of these approaches is the cognitive approach that started to flourish and establish more links to other academic fields including psychology, anthropology and linguistics among others. This implied that research on dyslexia was also extended, and subsequently, during the second half of the 20th century, a definition of dyslexia from a cognitive standpoint was introduced. This approach defines developmental dyslexia as a specific learning difficulty where reading difficulties occur despite otherwise normal cognitive functioning (Reid et al., 2003). As it can be observed from this definition, the word *disease* is no longer applied and the cognitive side does not have exclusive importance, as the educational standpoint is also incorporated with the use of the words *learning difficulty* or, in some cases, *disability*—terms that take the place of the initial word disease. This resulted in the modification of definitions provided by some researchers from other approaches. Such is the case

of Orton (1928) who initially defined dyslexia taking a neurological approach as a dysfunction related to brain hemisphere dominance (Orton, 1928 in Kálmos, 2011) but later changed the word dysfunction by defining dyslexia in the following manner:

> "Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterized by difficulties in single-word decoding, usually reflecting insufficient phonological processing abilities. These difficulties in single word decoding are often unexpected in relation to age and other cognitive and academic abilities: they are not the result of generalised developmental disability or sensory impairment. Dyslexia is manifest by variable difficulty with different forms of language, often including, in addition to problems of reading, a conspicuous problem with acquiring proficiency in writing and spelling" (Orton Dyslexia Society, 1994)[2].

Some other researchers who applied the same terminologies to define dyslexia include Cimermanová (2015, p. 39, 40) who defined it as a "specific language learning disability"; Hynd and Hynd (1984 as cited in Jiménez et al, 2009, p. 167) who expounded that it as a "developmental inability to read despite adequate opportunities, intellectual ability and motivation". Other three definitions that employ the terms learning difficulty and learning disability are Rose (2009), the US National Institute of Child Health (2002) and the Catalan handbook for the attention to diversity[3]. These three, apart from using either learning difficulty or disability to describe dyslexia, also associate it with the phonological processing problems. For instance, Rose's definition states the following:

> Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor coordination, mental calculation, concentration, and personal organisation, but these are not, by themselves, markers of dyslexia. (Rose, 2009, p. 10)

The Catalan Handbook for teachers also describes dyslexia as a "learning disability that primordially affects reading and written skills caused by the absence of neurological and/or sensorial alterations and by having previously received school opportunities for its learning" (*La dislèxia: detecció i actuació en l'àmbit educatiu*, p. 3).

Interestingly, a continuing debate has sparked as to whether the term difficulty is more suitable to use than disability/disorder or vice versa. This is due to the belief that the label learning disability/disorder reflects a "medical (deficit) model perspective" and that the other label, learning difficulty, "essentializes an interactional model of disability […] [and] stresses that educational interventions should be tailored to individual student's strengths and weaknesses" (Nijakowska, 2020, p. 259). In addition to these distinguishing traits of these two terms, Nijakowska (2020) adds that the term learning difficulty implies that the skills must be learnt, "while specific indicates that difficulties are restricted to problems with just one or a limited number of skills – academic skills of reading and spelling in the case of dyslexia" (Nijakowska, 2020, p. 259).

[2] Currently known as the International Dyslexia Association.

[3] *La dislèxia: detecció i actuació en l'àmbit educatiu*—Guia per a professors Educació Secundària Obligatòria

Moving on, although the educational standpoint has already been incorporated in the abovementioned definitions, a rather more subtle definition is formulated and proposed from this approach together with the environmental one. From this viewpoint, the conceptualisation of dyslexia being a learning difficulty or disability is abandoned and it is identified as a rather difference in information processing, involving both strengths and weaknesses, and reading difficulties are seen as accompanying symptoms rather than the core of the condition (Ranaldi, 2003, p. 8). Furthermore, in this view, dyslexia is seen as a dynamic condition that may cause the student to thrive in certain educational environments and fail in others (Gyarmathy, 2007; Ranaldi, 2003, p. 25; Kálmos, 2011, p. 5). Additionally, as already anticipated, this educational stance fuses with the environmental approach that views dyslexia not as a "static condition, but a developmental one, meaning that it is affected by environmental causes such as the native language of the dyslexic individual, the school, the wider educational environment and the home environment (Gyarmathy, 2007).

On the whole, as discussed above and illustrated in Table 1, dyslexia is a complex term to define as it has attracted many research fields that formulated their own conceptualisation of this word basing on their field of studies and interests. Until the 1950s, developmental dyslexia was described as a hereditary visual disability (Gayán, p. 7; Stein, 2018, p. 1) and this radically changed after the development of the phonological theory of dyslexia and the cognitive approach in which dyslexia is no longer perceived neither as a disease nor a dysfunction but as a learning difficulty or disability or even a difference in information processing. By and large, it is inexpedient to follow just one definition, as each of them has its own determining factors that help understand dyslexia better. In accordance with this, Tønnessen's (1997) concluding remarks on his paper *On Defining 'Dyslexia'*—with which this paper agrees—, accentuate that the multiplicity of definitions is not a problem arguing that "we need clear and useful definition[s]" and that "we do not necessarily need only one definition to be used in all circumstances, just as we do not necessarily need only one hypothesis for everyone who wants to do serious research" (Tønnessen, 1997, p. 88). He finalises his paper with a "common goal and set of common guidelines for how to define 'dyslexia' (Tønnessen, 1997, p. 88).[4] Therefore, in this paper, some of the concepts used to define dyslexia (e.g., language-based learning difficulty, disability or disorder; the difference in information processing) will be alternatively utilized as synonymous terms for dyslexia.

Developmental Dyslexia-- Definitions	**Approaches**
	Biological Approach Congenital word blindness or developmental dyslexia is "a disease of the visual system" (Gayán, 7; Stein, 2018, p. 1; Leciejewska, 2012, p. 22).
	Neuro-biological Approach Developmental dyslexia is defined as "dysfunctions related to visual memory déficits, brain hemisphere dominance and even faulty guidance of seeing mechanisms" (Hinselwood, 1917; Orton, 1928; Dearborn and Leverett, 1945 as cited in Kálmos, 2011).

[4] If interested in reading Tønnessen's ten guidelines for how to define 'dyslexia' read the following article https://www.researchgate.net/publication/233817532_On_defining_'dyslexia'

Cognitive Approach	
Developmental dyslexia is "a specific learning difficulty where reading difficulties occur despite otherwise normal cognitive functioning" (Reid et al., 2003).	
Educational approach	
Developmental dyslexia is a specific learning difficulty… (Reid et al., 2003)	
Developmental dyslexia is a "learning disability that primordially affects reading and written skills caused by the absence of neurological and/or sensorial alterations and by having previously received school opportunities for its learning" (*La dislèxia: detecció i actuació en l'àmbit educatiu*, p. 3).	
Developmental dyslexia is "a difference in information processing, involving both strengths and weaknesses, and reading difficulties are seen as accompanying symptoms rather than the core of the condition" (Gyarmathy, 2007; Ranaldi, 2003, p. 8. 25; Kálmos, 2011, p. 5).	
Environmental Approach	
Dyslexia is "not a static condition, but a developmental one, meaning that it is affected by environmental causes such as the native language of the dyslexic individual, the school, the wider educational environment and the home environment" (Gyarmathy, 2007).	

Table 1. Definitions of Developmental Dyslexia from five approaches.

2.2. Developmental Dyslexia—Causes, Symptomatology and Diagnosis

Determining the causes, symptoms and diagnosis of dyslexia goes hand-in-hand with the complexity of defining the term and the lack of a concise definition of it (Gayán, p. 2; Kálmos, 2011, p. 5; Reid, 2001). Kálmos' revision of the development of defining dyslexia (2011), states that after the cognitive shift of Special Education Needs (SEN) research of which dyslexia is part, by the end of the 20th century, each field that engages in the research of dyslexia not only created their own conceptualization of this learning difficulty but also introduced a "multitude of theories […] as to what caused the condition and how it should be remedied" (Kálmos, 2011, p. 5). Therefore, in parallel with Gyarmathy (2017), instead of attempting to identify one core cause of dyslexia from a neurological or cognitive aspect, this paper will focus on what it believes to be relevant to the main goal of the research and on the several widely accepted causes, symptoms and diagnosis (Gyarmathy, 2017).

2.2.1. Causes

In order to consider the causes of dyslexia, this paper takes into account the five approaches alluded to in the definition part of this paper (see 2.1.)— biological approach, neurological approach, cognitive approach and educational and environmental approach—will be taken into account to provide an

elaborate description of what is assumed to cause this learning difficulty. It is presumed that there are four levels and factors that cause people to suffer from this learning disability. Nevertheless, it must be highlighted that other causes exist (see 2.3.). Meanwhile, this section pivots on the four aforementioned causes beginning with the biological level. As several studies have shown, dyslexia "runs in the family" and, thus, is "very hereditarian" (Snowling, 2006; DeFries, 1996; Łodej, 2016, p. 1; Cimermanová, 2015, p. 40). It is believed that children with dyslexic parents have a 50 % chance to acquire dyslexia. Snowling (2006) goes further to this assumption stating that the probability of a boy becoming dyslexic is 50 % if his father is dyslexic and 40 % if his mother is dyslexic (Snowling, 2006, p. 6 in DeFries, 1996). Furthermore, abundant evidence shows that dyslexia might be linked to specific chromosomes due to the connection found between reading difficulties and chromosome 15, chromosome 2 and chromosome 18. (Fagerheim et al., 1999; DeFries, 1996; Voller, 2006 and Fisher et al. 2002, as cited in Łodej, 2016, p. 2).

Moreover, as indicated by researchers (Nijakowska, 2020; Cimermanová, 2015; Guron & Lundberg, 2000), a fusion of biological and neurological perspectives resulted in the existence of a neurobiological cause of dyslexia whereby it is presumed that impairments in the brain anatomy and mechanisms cause dyslexia. These impairments include disorganization in the cerebral cortex in the language areas, abnormal pathways or abnormal cerebellum (Nijakowska, 2020, p. 258; Cimermanová, 2015, pp. 40; Guron & Lundberg, 2000, p. 46, 47). Łodej (2016) develops the idea of disorganization by stating that when Wernicke's area (located in the left temporal lobe and specializes in the detections of language signals) and Broca's area (located in the frontal lobe and responsible for producing fluent speech and organizing words according to grammatical rules) are impaired and/or deficient, meaning cannot be accessed and speech is slow and ungrammatical (Łodej, 2016, pp. 2, 3). Next to the neurobiological level comes the cognitive level that "relate[s] to mind and mental processes looking at phenomena such as reduced working memory, poor phonological processing, incomplete automatization and slow central processing" (Nijakowska, 2020, p. 258). This level will be given more importance when symptoms are discussed.

Additionally, another factor that causes dyslexia is the environment which includes the native language and the second language, if there is one, of the dyslexic individual, the school, the wider educational environment and the home environment (Gyarmathy, 2007; Landerl et al., 2012, p. 687; Nijakowska, 2020, p. 260). Many researchers support Wydell and Butterworth's (1999) proposed hypothesis of granularity and transparency to predict the incidence of phonological dyslexia in different languages (Simon, 2000; Goswami, 2002; Wydell and Butterworth's, 1999, as cited in Jiménez et al., 2009, 168). In this hypothesis, it is suggested that orthographies with fine granularity and opaque print-to-sound translation would have a high incidence of developmental dyslexia (Jiménez et al., 2009, p. 168; Lundberg, 2002, p. 179; Goswami, 2002, pp. 142, 149). In line with this, English among other languages is considered an opaque language and is assumed to be the most inconsistent alphabetic orthography (Share, 2008, as cited in Landerl et al., 2012, 688; Leciejewska, 2012, p. 31; Lundberg, 2002, p. 179; Guron & Lundberg, 2000, p. 42, 43, 60; Łodej, 2021, p. 104) and, thus, dyslexic students learning this language as a primary or secondary language have a higher probability to struggle than when learning a transparent language such as the Spanish and Italian language (Landerl et al., 2012, pp. 687-8; Jiménez et al., 2009, 168; Lundberg, 2002, p. 179; Goswami, 2002, p. 149).

Nonetheless, Nijakowska (2020) infers that environmental impacts involving learning and experience are "powerful enough to modify connections between nerve cells resulting in long-lasting structural and functional changes" (Nijakowska, 2020, p. 258) and she cites Frith's assumption (1999) that the environment in which the development occurs is "capable of altering gene expression as a result of its

interaction with genetic inputs, in that way influencing subsequent learning processes" (Frith, 1999 as cited in Nijakowska, 2020, p. 258). The authors continue to suggest that reading experience and instructional practices may modify the signs of dyslexia (Ibid).

In addition to the four factors, Łodej (2016), Peterson & Pennington (2012) and Moll et al. (2020) also believe in the co-morbidity factor (Łodej, 2016; Peterson & Pennington, 2012, p. 1997; Moll et al., 2020, p. 1) which assumes that this developmental learning difficulty can co-occur with other disorders such as Dyspraxia, ADHD, mild depression (dysthymia) and anxiety—four disorders deemed to frequently coexist with dyslexia (Łodej, 2016, p. 3; Chisom, 2016, p. 9, 10). Łodej (2016) goes beyond by arguing that the coexistence of these disorders is seen in either shared dysfunctional brain mechanisms or shared hereditary risk factors (Ibid).

To sum up, current research widely accepts that there are four main factors that cause dyslexia: the neurobiological factor, cognitive factor, educational factor and environmental factor. In addition to these factors, co-morbidity is also considered a factor even though researchers such as Nijakowska (2020) points out "causality should be treated more as probability rather than certainty" (Nijakowska, 2020, p. 258). This implies that these discussed causes are not the only determining factors that can lead a person to have dyslexia, and it also emphasizes the idea that the causes of dyslexia are still an open field of investigation (Libera, 2015, p. 13).

2.2.2. Symptoms

The range of symptoms pertaining to dyslexia is broad and can be influenced by age, sex, or educational background (Brunswick, 2011 as cited in Lodej, p. 3). Theories concerning the symptomology of dyslexia vary depending on the scientific field of study one considers. This paper focuses on cognitive symptoms discussed and explored in detail in Lodej's article. She cites Moody (2004; 2007), Fawcet and Roderick (1993) and Snowling (2006) and poses that the symptoms of dyslexia are commonly described concerning the areas of cognitive weakness: short term memory, phonological skills, sequencing and structuring of information, perception and movement (Moody, 2004; 2007; Fawcet and Roderick, 1993 and Snowling, 2006 as cited in Łodej, 2016, 3). These symptoms are also reflected and discussed in numerous research papers including those of Crombie (2003, p. 2), Guron & Lundberg (2000, p. 42), Simon (2000, pp. 163, 169-179), Reid (2001), Goswami (2002, pp. 149, 150), Ranaldi (2003, pp. 14-16), Brunswick (2011), Leciejewska (2012, p. 27-29), Landerl et al. (2013, p. 687), Cimermanová (2015, pp. 40, 41), Nijakowska (2020, p. 262) and Łodej (2021, p. 105). This study specifically centred on those explanations by Łodej's (2016, pp. 3-6) for their clear and concise description summarized below. Moreover, it does not only contain the symptoms, but it specifies the possible consequences and problems these symptoms might bring to dyslexic individuals. The following table summarizes the 6 specific symptoms and consequences described in Łodej's paper (2016, 3).

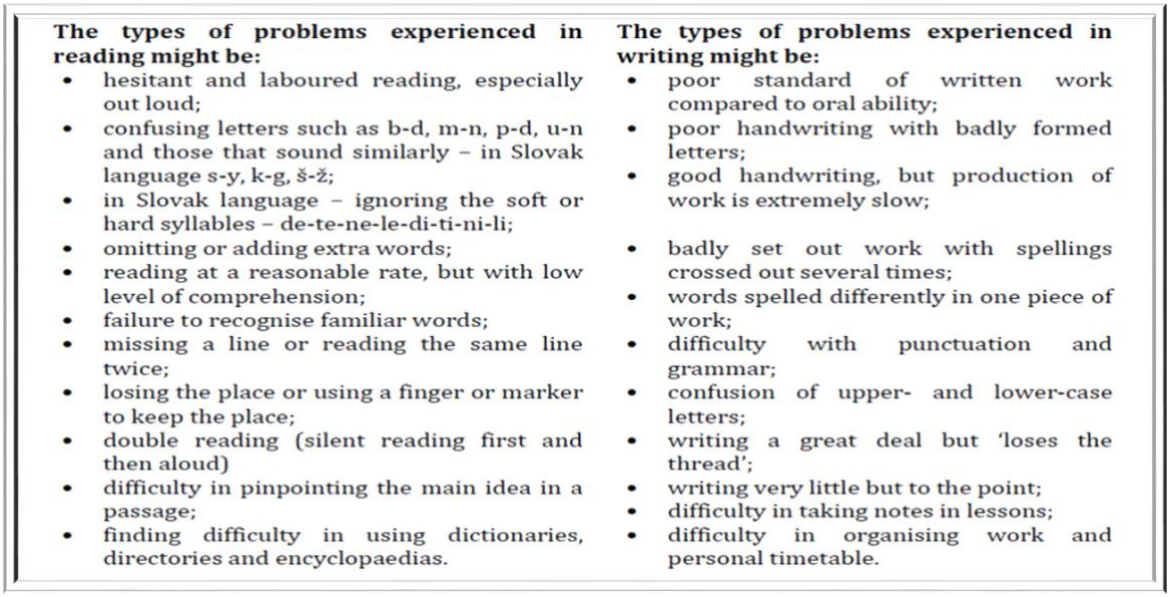
Symptoms	Consequences
Weak short-term memory	Problems in: • copying from the board correctly • remembering messages • keeping track of ideas when speaking, listening, reading, and writing

	• taking notes when reading or listening • saying long words • remembering dates or names • multi-tasking (listening and taking notes)
Deficient phonological skills	• low reading accuracy • low reading speed • poor spelling • problems with saying long words • comprehending long words
Deficiencies in sequencing and structuring information	Problems in • writing and copying accurately • following and understanding instructions • carrying out instructions in the correct sequence • structuring an essay • taking clear notes • filling in a form
Combination of visual and auditory perception deficits (Eleveld, 2005, p. 19)	• seeing letters back to front or upside-down (m / w or p / b) • seeing letters in the wrong sequence (was as saw) • missing out words or lines • keeping track of letter sequences in long words (reading conservation as conversation) • making sound substitutions in reading • problems with making correct associations between printed • symbols and sounds • problems with left to right orientation • perception difficulties and ignore details, e.g., plural forms (Simon, 163, 167)
Deficient motor skill	• slow and untidy handwriting • poor balance • poor judgment of distance • the tendency to fall or bump into objects

Table 2. Six cognitive symptoms of dyslexia and specific problems dyslexic students have according to Łodej (2016).

In addition to the detailed symptoms and possible problems that dyslexia bears, Cimermanová (2015) designed a bisected chart where she specifies the possible types of problems experienced in both reading and writing—two linguistic domains crucial in both first and second language learning. This chart is

inserted below with the aim to help EFL Secondary teachers to have a better grasp of possible problems they may witness when handling dyslexic students in the EFL classrooms. However, it must be taken into account that disparities also exist amongst dyslexic individuals meaning that some of them might exhibit some symptoms that others do not. This notion about the differences amongst students will be the triggering factor of why some scholars such as Friedmann and Coltheart (2018) indulged themselves in trying to classify the subtypes of developmental dyslexia.



The types of problems experienced in reading might be:	The types of problems experienced in writing might be:
• hesitant and laboured reading, especially out loud; • confusing letters such as b-d, m-n, p-d, u-n and those that sound similarly – in Slovak language s-y, k-g, š-ž; • in Slovak language – ignoring the soft or hard syllables – de-te-ne-le-di-ti-ni-li; • omitting or adding extra words; • reading at a reasonable rate, but with low level of comprehension; • failure to recognise familiar words; • missing a line or reading the same line twice; • losing the place or using a finger or marker to keep the place; • double reading (silent reading first and then aloud) • difficulty in pinpointing the main idea in a passage; • finding difficulty in using dictionaries, directories and encyclopaedias.	• poor standard of written work compared to oral ability; • poor handwriting with badly formed letters; • good handwriting, but production of work is extremely slow; • badly set out work with spellings crossed out several times; • words spelled differently in one piece of work; • difficulty with punctuation and grammar; • confusion of upper- and lower-case letters; • writing a great deal but 'loses the thread'; • writing very little but to the point; • difficulty in taking notes in lessons; • difficulty in organising work and personal timetable.

Figure 1. Reading and Writing Problems of Dyslexia according to Cimermanová (2015).

2.2.3. Diagnosis

As Nijakowska (2020) and Cimermanová (2015) observed and as personally experienced by Simon (2000), dyslexia is a cross-cultural, chronic, lifelong condition which cannot be outgrown and typically persists into adulthood (Nijakowska, 2020, p. 159; Cimermanová, 2015, p. 40; Simon, 2000, p. 163). Consequently, a considerable amount of emphasis is put on the idea that early identification of dyslexia should be done for the individuals subjected to it (Nijakowska, 2020, p. 159; Cimermanová, 2015, p. 40; Łodej, 2016, p. 6; Leciejewska, 2012, p. 22; Simon, 2000, p. 163). A successful early diagnosis of dyslexia bears multiple advantages all beneficial for dyslexic individuals. To illustrate, Reid (1998) states the following:

> the identification and assessment of specific learning difficulties [such as dyslexia] is of crucial importance, since a full assessment will facilitate the planning of appropriate interventions (Reid, 1998, p. 34).

A similar point is featured in Łodej's introductory remarks (2016) where she states that early diagnosis allows reading disabled children to be provided with appropriate intervention and treatment, which enables them to function properly in society (Łodej, 2016. p.1). Rather than receiving appropriate support and intervention, individuals with dyslexia, especially students, suffer from insults, harsh and severe treatments (Friedmann & Coltheart, 2018, p. 30) and are typically ascribed in schools as students with low IQ or underdeveloped mental capacities (Kálmos, 2011, 4). Therefore, an appropriate diagnosis would help and will lead the parents and teachers of these individuals to deal with them

adequately […] by attempting to overcome the difficulty by a patient and persistent training (Friedmann & Coltheart, 2018, p. 30).

Another benefit of early identification is that the "brain is much more plastic in younger children and potentially more malleable for the rerouting of neural circuits" (Shaywitz, 2008, p. 611-612 as cited in Cimermanová, 2015, p. 40). Moreover, as far as second language learning in higher education is concerned, early identification of dyslexia can help dyslexic learners to be able to "fulfil high school and college foreign language requirements"—something that frequently does not materialise since many remain undiagnosed and receive little or no intervention services (Mortimere, 2008, 57, Cimermanová, 2015, p. 40; International Association of Dyslexia; Simon, 2000, p. 156).

Furthermore, the importance of early identification of dyslexia is reflected in the Catalan handbooks for the attention to diversity dedicated to both the detection and interventions of dyslexia in the Catalan educational system. These handbooks, which are particularly designed for both Primary school and Secondary school students and teachers, contain 13 pages each where a brief explanation about dyslexia and three stages of interventions are provided. Additionally, a particularly useful part of these handbooks, for instance, the one for the Secondary schools, is the *Protocol d'observació per a detectar indicadors de la dislèxia en l'educació secundària obligatòria- ESO*[5], a special document that is mainly formulated to detect whether students are most likely to be dyslexic or not. As can be seen in the Appendix 1, this short test is divided into two parts: the general aspects and the specific aspects with 44 sentences in total. To the former, it includes six sentences related to the family background of the tested student, problems with written and oral skills, and an oscillating academic performance among others. Whereas to the latter, there are the 38 remaining sentences which are more related to the symptoms and many possible problems discussed in the causes and symptomatology parts of this paper.

Focusing on other suggested tests and examinations to determine dyslexia in students, Reid (1998) poses that these assessments should consist of three aspects: difficulties, discrepancies, and differences. He explains each in detail in the following paragraph:

> The *difficulties* are related to reading and writing and caused by dysfunctional phonological processing, memory, weak organisational and sequencing skills, as well as dysfunctional motor coordination or perceptual difficulties. The *discrepancies* are the result of a comparison of reading and writing to listening skills, or a comparison between speaking and writing skills, in which the *differences* are observed with relation to individual learners. Reasons for assessment might differ: (1) to identify the learner's strengths and weaknesses, (2) to assess the learner's current knowledge, (3) to explain the learner's lack of progress, (4) to identify types of errors in the learner's reading, writing, and spelling skills, (5) to understand the learner's learning styles (6) to indicate aspects of a curriculum that may interest and motivate the learners (Reid 1998, p. 31).

Finally, other designed tests to detect dyslexia include the Dyslexia Early Screening Test by Nicolson and Fawcett (1996), the Scale of Risk of Dyslexia by Bogdanowicz (2002) and the Framework for Testing Dyslexia in a Multilingual Context proposed by Smythe and Everatt (2000) (Nicolson and Fawcett, 1996, Bogdanowicz, 2002 and Smythe and Everatt, 2000 as cited in Łodej, 2016. p. 7, 9)[6].

[5] In English, *Observation Protocol for Detecting Dyslexia Indicators in Compulsory Secondary Education*.
[6] These tests are well-explained and summarized in these sections of Łodej's article.

Despite the applicability of these standard tests, their effectiveness is quite relative, as these "do not include the relevant stimuli to detect all types of dyslexia, and therefore not sensitive to many of the dyslexia types" (Friedmann & Coltheart, 2018, p. 28). As an example, these tests commonly include ir/regularwords and nonwords which will only allow for the detection of surface dyslexia and phonological dyslexia—two types of dyslexia that will be explained in detail in the typological part—but not the other types.

In summary, early identification of dyslexia is emphasized by many professionals as they believe that it facilitates the planning of appropriate interventions and will lead the dyslexic individuals to be provided with appropriate intervention and treatment, which enables them to function properly in society (Łodej, 2016. p.1). In addition, many tests are designed to facilitate the detection of dyslexia. However, the drawback of these tests is that they are mainly devised to detect only two of the most common types of dyslexia.

2.3. Typology of Dyslexia

Dyslexia is not only problematic in terms of its definition, causes, symptoms and diagnosis, but also in the variety of forms that it can take which is undergoing continued debate by professionals (Friedmann & Coltheart, 2018, Libera, 2015; Jiménez et al., 2009). However, this paper will explore some of the recent studies on the two types of dyslexia, developmental dyslexia and acquired dyslexia, and go beyond by entering the proposed classification of types of developmental dyslexia according to Friedmann and Coltheart (2018) that have far-reaching implications theoretically, clinically and educationally speaking (Friedmann and Coltheart, 2018, p. 28, 29).

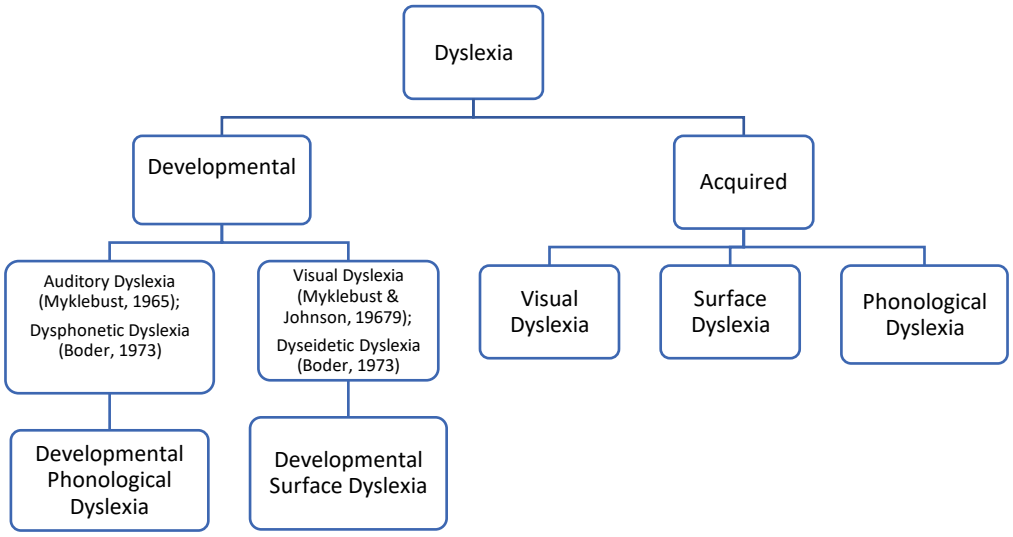


Figure 2. Typology of Dyslexia according to Friedmann and Coltheart (2018).

As shown in Figure 2, which represents a schematic summary of the typology of dyslexia, this particular language-based learning difficulty has two types: developmental and acquired, both of which have their own subtypes. This paper deals with developmental dyslexia which Libera (2015) defines by referring to "children, [or individuals], who have never learnt to read correctly, and as a consequence, even though they can both read and write, they use all their mental and attentive energies because, unlike

their peers, the process is not automatic" (Libera, 2015, p. 13). This dyslexia has two subtypes, developmental phonological dyslexia and developmental surface dyslexia that is further classified into other subtypes by Friedmann and Coltheart (Friedmann & Coltheart, 2018, p. 7). Whereas acquired dyslexia is a difficulty in reading and writing due to brain damage (Friedmann & Coltheart, 2018, p. 1). Even though this paper will not focus on this type, it should be mentioned that it has three subtypes: visual dyslexia, surface dyslexia and phonological dyslexia.

Additionally, the quest for developmental dyslexia's subtypes has induced a lot of exploration. However, according to a free online course entitled *Understanding Dyslexia*, no clear and consistent subgroups have stood the test of time and experimental investigation (*Understanding Dyslexia*, OpenLearn). The most consistent differentiation has been between auditory problems (e.g., challenges in distinguishing and controlling letter sounds inside words) and visual problems (e.g., troubles in outwardly perceiving and recalling words) (Ibid). These categories are what this paper inferred earlier as developmental phonological dyslexia and developmental surface dyslexia, respectively. Moreover, in Friedmann and Coltheart's (2018) attempt to identify the subtypes of developmental dyslexia, they renamed both developmental phonological dyslexia and developmental surface dyslexia referring to the former as *peripheral developmental dyslexia* and the latter as *central developmental dyslexia* (Friedmann & Coltheart, 2018, p. 7). This process of renaming stemmed from the functional cognitive architecture assumed by the dual route theory that can be seen below (see figure 3). This theory contemplates a phonological dyslexia profile characterized by impaired phonological skills and fairly well-preserved orthographic skills and a surface dyslexia profile characterized by impaired orthographic skills and fairly well-preserved phonological skills" (Jimnénez et al., 2009, 168; Friedmann & Coltheart, 2018, p. 7). In section 2.3.1., these several terms will be fused together

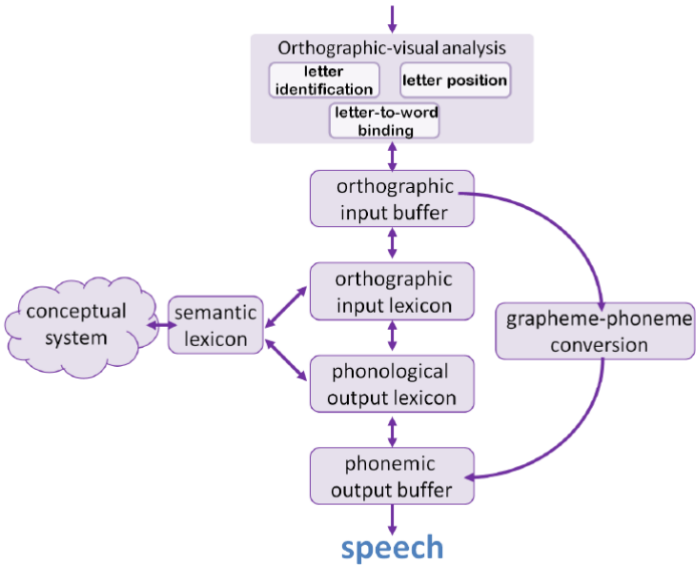


Figure 3. The dual-route model for single word reading.

2.3.1. Typology of Developmental Dyslexia

Friedmann & Coltheart (2018) believe that the two types of developmental dyslexia namely *peripheral (phonological) developmental dyslexia* and *central (surface) developmental dyslexia* have their

subtypes (Friedmann & Coltheart, p. 2018). These subtypes are illustrated in table 3. Nevertheless, this researcher considers that the descriptions about the subtypes of developmental dyslexia are beneficial for teachers, as it can facilitate the planning of appropriate interventions and will result in a better provision of intervention and treatment that can enable dyslexic individuals to succeed academically and, as Łodej (2016) states, to function properly in bigger context (Łodej, 2016. p.1). As a consequence, apart from table 3, a more detailed summary of the types and subtypes of developmental dyslexia will be provided.

Types of Peripheral (Phonological) Developmental Dyslexia	**Types of Central (Surface) Developmental Dyslexia**
Letter Position Dyslexia (LPD)	Surface Dyslexia
Attentional Dyslexia	Phonological Dyslexia
Letter Identity Dyslexia	Vowel Letter Dyslexia
Neglexia	Deep Dyslexia
Visual Dyslexia /Orthographic input buffer dyslexia	

Table 3. Typology of Developmental Dyslexia from Friedmann and Coltheart (2018).

The explanations presented below typology of developmental dyslexia are based on the dual-route model theory illustrated in figure 3. Therefore, to achieve a better understanding on the subtypes of developmental dyslexia, it is suggested to follow this particular theory. Furthermore, as can be seen throughout this section, other scholars are also cited the same way they are cited by Friedmann & Coltheart (2018).

Peripheral (Phonological) Developmental Dyslexia

- **Letter Position Dyslexia (LPD):** deficit in the orthographic-visual analyzer. Letter migration within words.
    - Defining symptoms and properties:
        - Letters that are mainly transposed are middle letters, whereas the first and final letters hardly ever lose their positions (e.g., *fried* becomes *fired*; *diary* becomes *dairy*).
        - Migration with both consonants and vowel letters and in both root and affixed.
        - Adjacent letters transpose more often than non-adjacent ones.
        - Omission of doubled letters. (e.g., *drivers* as *divers*; *baby* as *bay*).

- **Attentional Dyslexia:** deficit in the orthographic-visual analyzer. Letter migration between neighbouring words but are correctly identified and keep their original relative position within the word (e.g., *cane love* as *lane love* or even *lane cove*).
    - Defining symptoms and properties:
        - Between-word position encoding can be impaired while within-word position encoding remains intact.
        - Migrations are more likely to occur when the result of migration is an existing word in both word and nonword pairs.
        - Final letters migrate more.
        - Languages: Hebrew, Arabic, English, Italian and Turkish (Friedman, Kerebel, Shvimer 2010; Friedmann and Haddad-Hanna, 2014; Rayner et al., 1989).
        - Strategy: read with a "reading window"—a piece of cardboard with a word-sized window cut in its middle (Friedmann and Coltheart, 2018, p.13).

- **Letter Identity Dyslexia (LID):** deficit in the orthographic-visual analyzer, in the function responsible for creating abstract letter identities. Readers with LID cannot access the abstract identity of letters from their visual form, thus, they cannot name a letter, identify a written word according to its name or sound, or match letters in different cases (Aa).
    - Defining symptoms and properties:
        - Failure in incorrect identification of letters in isolation, in substitution or omissions of letters within words and nonwords.
        - Consistency in "don't know" responses.
- **Neglect Dyslexia:** also referred to as *neglexia*; readers with neglexia, at the word level, neglect one side of the word, typically the left side. Neglecting one side of a word results in omissions, substitutions, or additions of letters on that side of the word, which occur more frequently when the result is an existing word.
    - Defining symptoms and properties:
        - This type of developmental dyslexia affects written word comprehension and lexical decision on written nonwords (e.g., *rice* may be taken to be *frozen water*, and *gice* may be judged as an existing word. It can be orthographic-specific.
        - Children with neglexia make neglect errors when instructed to read the word list, but when the same list of stimuli was presented with the instruction "please read these numbers", they make almost no neglect errors.
        - The neglected side of the word is more sensitive to neglect errors when it is part of an affix and is almost never omitted when it is part of the base or root (Reznick & Friedmann, 2009).
        - Reading direction affects manifestations of dyslexia as in languages read from left to right, left neglexia would affect the beginning of words, and in right-to-left languages, it would affect their ends.

    - Strategy:
        - manipulations on the text that attract attention to the left of the word may reduce neglect errors in reading considerably (Friedmann and Coltheart, 2018, pp. 15, 16)
        - Vertical presentation of the target words and presentation of the word with a double space between the letters were also useful.

- **Visual Dyslexia /Orthographic input buffer dyslexia**: a deficit in the orthographic-visual analysis stage that causes reading the target words as a visually similar word, with errors of substitutions, omissions, migrations, and additions of letters. (Marshall and Newcombe, 1973)
    - Defining symptoms and properties:
        - A deficit in the output of the orthographic-visual analyser.
        - It affects all functions of the orthographic-visual analyser: letter identification, letter position within the word, and letter-to-word binding.
        - It involves letter identity errors and letter migrations within and between words.
        - Migrations within words occur in exterior letters as well as in the middle letters.

Central (Surface) Developmental Dyslexia

- **Surface Dyslexia**: deficit in the lexical route which forces the reader to read aloud via the sublexical route, through grapheme-to-phoneme conversion.
    - Defining symptoms and properties:
        - Make regularization errors in reading aloud. (e.g., irregular words, such *as stomach*, *receipt*, or *comb* which include a silent letter)
        - Affects the reading of words that allow for ambiguous conversion to phonology (e.g., *bear* as *beer*)
        - Difficulties with ambi-phonic words when converted (e.g., the letter *i* which is pronounced one way in *kid* and another way in *kind*)
        - People with pure surface dyslexia, where only the lexical route is impaired have intact sub-lexical route and they are therefore able to read nonwords normally (Castles, Bates, & Coltheart, 2006)
        - Apart from having effects on the accuracy of reading aloud, it also affects comprehension. It also results in slower-than-normal reading.
        - A class of words that are specifically difficult for readers with surface dyslexia are words that when read via the grapheme-to-phoneme conversion route, can result in another existing word (also known as, *potentiophonemes*).

- **Phonological Dyslexia**: the sublexical route is impaired and reading can only proceed via the lexical route.
    - Defining symptoms and properties:
        - Difficulty in reading nonwords, which appears alongside the correct reading of words that are stored in the orthographic input lexicon.
        - Difficulty reading new words, can only read words that are already in their orthographic input lexical and phonological output lexicon.
        - They take a much longer time to learn to read. Severe difficulty when they learn to read in a new language.
    - Types:
        - A deficit in the conversion of single letters into phonemes.

        - Letter-to-phoneme conversion phonological dyslexia fails even when they try to sound out single letters.
        - Multiletter phonological dyslexia involves the more complex rules of conversion, which apply to more than a single letter. This does not affect the pronunciation of single letters but can be detected when multilettered graphemes are read.
        - Another frequent type is a deficit that does not affect the conversion itself but rather the next stage, in which the phonemes that are the products of the conversion are stored for a short time and assembled into a whole word or a non-word. This deficit shows a clear length effect, with longer words and nonwords showing more errors than shorter ones.

- **Vowel Letter Dyslexia**: deficit from a specific deficit in the sublexical route that selectively impairs the way the sublexical route processes vowels. They omit, substitute, transpose and add vowel letters. (e.g., the word *bit* can be read as *bat*, *but*, or even *boat*. These errors occur in reading, and they affect vowel *letters* rather than vowel phonemes.
    - Defining symptoms and properties:
        - Difficulties only when they read non-words and new words, but they can still read correctly via the lexical route

- **Deep Dyslexia**: within the dual-route model, this reading pattern was interpreted as multiple lesions in both the sublexical grapheme-to-phoneme conversion route and in the direct lexical route between the orthographic input lexicon and the phonological output lexicon, which force the reader to read via meaning (Ellis & Young, 2988 as cited in Friedmann & Coltheart, 2018, p. 24-25).
    - Defining symptoms and properties
        - The production of errors in reading, such as reading the written word *lime* as *lemon* or *sour*.
        - This is reported in English (Johnston, 1983; Siegel, 1985; Stuart and Howard, 1995; Temple, 1988, 1997)
        - When children with deep dyslexia are asked to read nonwords, they either declare that they cannot read these words or lexicalize them—reading them as similar existing words (reading *digger* as *tiger*)
        - Function word substitution with another function word or a visually similar concrete word. Imageable and concrete words are read better than abstract words.
        - Errors:
            - Morphological (played as “play”, birds as “bird” and *smiles* as “smiling”
            - Visual errors (*clay* as “play”, owl as “own”, and *gum* as “gum”.

2.4. Developmental Dyslexia—Educational Approaches, Strategies, and Interventions

As a positive outcome of the continuous and increasing number of research papers conducted on dyslexia, a huge number of approaches, strategies and interventions have been designed and proposed.

The effectiveness of each strategy depends on many factors such as the type of dyslexia an individual has, its environment and even the attitude and self-efficacy of the people who provide these suggested interventions, mostly teachers (Crombie, 2003, p. 1; Kálmos, 2011, p. 10; Nijakowksa, 2020, p. 264; Kormos & Nijakowska, 2017, p. 31). On the one hand, as regards the first factor, Crombie (2003) points out that "all dyslexic young people are not the same. […]. What works for one may not work for another" (Crombie, 2003, p.1). On the second hand, concerning EFL teachers, Nijakowska et al. (2018) states the following:

> FL teacher knowledge of the nature of dyslexia as a specific learning difficulty, […], effective teaching techniques and inclusive instructional practices, and the underlying theoretical principles of effective reading intervention programmes as well as of the local educational policy and available classroom and exams accommodations constitutes an important component of teachers' preparedness to effectively work with dyslexic students in FL classrooms (Nijakowska et al., 2018).

Taking these principles into account, this paper compiles a list of the most cited approaches and specific strategies and interventions that are likely to be helpful to all students, not only those who are dyslexic.

2.4.1. Approaches

This section encompasses four of the most suggested educational approaches that teachers should employ in their (EFL) classrooms including the diversity-oriented approach, the metacognitive and metalinguistic approach, the Multisensory approach and the individual approach. These four approaches are selected for this paper believing that they are all applicable for all types of students making them the center of their learning process and, at the same time, satisfying their individual needs.

Diversity-oriented Approach: Kálmos (2011) advocates the importance of abandoning the performance-oriented approach—an educational approach that is mainly concerned with the student's achievements and sees errors and dyslexia as "glitches in the learning process that need to be corrected or even prevented" (Kálmos, 2011, p. 6). As an alternative, she encourages teachers to implement the diversity-oriented approach whereby achievements are not the end-product, as it accentuates the learning process, "the different paths students can take during the learning process and ways of accommodating their diverse needs to make learning more effective for them" (Ibid). She adds that this approach, which makes dyslexic students feel they belong to society, also fosters diversity that would enrich society rather than an opportunity to categorize people and assign values to them (Ibid).

Adopting a metacognitive and metalinguistic approach: Schneider and Crombie (2003) put emphasis on the importance of adopting these two approaches. They suggest "make language learning a 'discovery learning' process in which students turn into 'language detectives' (Schneider and Crombie, 2003, p. 17 as cited in Cimermanová, 2015, p. 45). As a manner of application, Cimermanová (2015) and Crombie (2003) invite teachers to encourage students to find out (1) about the structures and uniqueness of the new language, (2) why certain structures are used in the way they are, and (3) how they can self-correct and monitor their own reading and writing (Cimermanová, 2015, p. 45; Crombie, 2003, p. 3). Moreover, Simon (2000) suggests that teachers should regularly ask students to share study strategies that have helped them master difficult foreign language principles and provide additional strategies of their own (Simon, 2000, p. 182).

Multisensory Approach: many researchers support the employment of this approach defined by Kormos and Smith (2012) as a way of teaching that presents and teaches L2 "through the activation of auditory, visual, tactile and kinesthetic pathways (Simon, 2000, p 182; Nijakowska et al. 2013; Kormos and Smith, 2012 as cited in Cimermanová, 2015, p. 46). As dyslexic students are found to have auditory and visual weaknesses (Friedmann and Coltheart, 2018; Gayán, 7; Stein, 2018, p. 1), applying images, sounds or touch is a way of compensation. Some of the interesting examples of using this approach include (1) bringing real objects into the classroom that enables learners to apply additional sensory channels rather than encoding the words or texts verbally, (2) providing opportunities to engage in memorized dialogues and sing songs that emphasize the grammatical principles being taught, (3) verbal information can be simultaneously combined with visual information (e.g., use handouts, overheads).

Individual Approach: Cimermanová (2015) stresses the following approach by summarizing what Nijakowska et al (2013) propose on their handbook aimed at accommodating learners with dyslexia:

> *Placing students close to the teacher* can help e.g.to limit distracting factors (sounds, objects, etc.) as we can in some way "close" the space among the teacher, students and board. *Using flexible work times* might be useful with dyslexic learners as they sometimes need more time to complete assignments (if students are seated close to the teacher, he can constantly monitor their progress). To reduce the time they need to complete the assignments they should be *allowed to use instructional aids*. Sometimes it is worth considering the *use of assignment substitutions or adjustments*.

2.4.2. Specific strategies and interventions

Foreign language learning can be especially difficult for dyslexic students due to problems they might face, particularly their reading and writing difficulties. Therefore, it is unquestionable to conclude that classroom accommodations can play a significant role in dyslexic students' success. Rogers (2003) accentuates the importance of knowing the most efficient learning strategies for students. For this reason, this sections provides a list of specific strategies and interventions from numerous scholars such as Nijakowska (2020), Nijakowska et al. (2013), Cimermanová (2015), Łodej (2016, 2021), Kálmos (2011), Friedmann & Coltheart (2018) among others. Moreover, the following 14 specific strategies and interventions will be used in the questionnaire for EFL Secondary teachers in Barcelona.

- Dyslexic students need more time for certain activities and thus good organization might save their time. To support them,
    - provide students with a graphic organizer (e.g., charts, blank webs, maps)
    - encourage learners to use graphic organizers
    - encourage the use of assignment books or calendars where pupils can record due dates, homework, and test dates.
- Dyslexic learners normally have problems with written tasks. To support them, as teachers,
    - reduce copying by including information or activities on handouts or worksheets,
    - provide a glossary in the content area and/or outline /copy of the lecture
    - provide additional practice.

- Use **dyslexia-friendly fonts** such as *Comic- Sans*, *Century*, *Sylexiad*, *Dyslexie*, *Read Regular*, *OpenDyslexic* (Rello, Baeza-Yates, 2013)[7].
- To directly increase the average reading efficiency of low-progress readers one can also change the font's spacing settings (Marinus et al., 2016, p.10).
- For materials, **highlight essential information** and use **hierarchical worksheets** where tasks are arranged from easiest to hardest.
- Employ explicit teaching procedures (demonstrations, guided practice, corrective feedback and gestures).
- When giving instructions, give **repeated directions** and **check** understanding. If instructions are long and complicated, follow a **step-by-step instruction** or break them down into subsets.
- Clarify or simplify written directions with the samples.
- Use **flexible work times** as dyslexic learners sometimes need more time to complete assignments.
- Place dyslexic students close to the teacher to be able to constantly monitor their progress.
- Encourage dyslexic students to use **metalinguistic strategies** (e.g., to find out why certain expressions are used the way they are) to allow him/her to process the FL language in multi-sensory ways using their strengths to compensate for auditory and or visual weakness.
- Invite students to use speech-to-text software such as Voki, as it saves dyslexic students' time and stress. In this software, students dictate the text, and the software transfers it to the written text. Some of them include even games to improve vocabulary and thesaurus (Cimermanová, 2015, p. 55).

In addition to the above strategies and interventions, an ample number of other ways to help dyslexic students and address their needs can be found in Cimermanová's article (2015) which particularly focuses on teaching English as a foreign language to dyslexic learners. For instance, she elaborates on several techniques to teach vocabulary and grammar and shares ideas on how to develop motivation and habit of reading for these students through extensive reading exercises using graded readers and dyslexia-friendly books for more elementary learners[8]. In the same paper, she underscores the benefits of using text-to-speech software including Voki, *The Spy Sam Reading Series*, *Dr Seuss*, *Make Sentences*, *Play and Learn Languages*, *Gamebooks: Read and Learn*, *Kurzweil 3000*, *KESI Calculator application* among others. [9]

Finally, incentivized by the urge to ameliorate the educational system and the learning experience of students, the Catalan Department of Education through the handbook for dyslexia mentioned earlier

[7] By clicking these words, you will be able to get a copy of the dyslexic-friendly fonts and add them to chrome (e.g., extension).

[8] Read page 41 up to 51 of *Teaching English as a foreign language to dyslexic learners* https://doi.org/10.17846/SEN.2015.39-62.

[9] Cimermanová (2015) and Reid also added a list of textbooks and website (see Appendix 2).

provides *Pautes d'actuació per als alumnes de secundària obligatòria- ESO*. This section of the handbook covers the following: different modalities of intervention, methodological strategies, the planning of activities, the gradation of measures and supports and the didactic materials and the evaluation of the objectives set in each area of intervention[10] [see appendix 1].

3. Dyslexic Learners, Inclusive Learning and EFL Teachers' Self-efficacy Beliefs, Attitude and Concerns

As much research indicates, dyslexic students face a number of challenges in their native languages, and multiple studies infer that the weaknesses they demonstrate caused by dyslexia also inhibit their development of foreign language proficiency (Kormos, 2017; Kormos & Smith, 2012; Nijakowska, 2010; Peter and Reid, 2016; Schnieder and Crombie, 2003; Sparks, Patton Ganschow, Humbac & Javorsky, 2006 as cited in Kormos & Nijakowska, 2017, p. 31). To verify this assumption, Guron and Lundberg (2000) made a study where they found that dyslexic students who read native language texts with poor efficiency and low automaticity also experience the same, if not, almost the same situation when approaching a text in L2 (Guron and Lundberg, 2000, p. 42). These two also cite the presumption Spolsky (1989) made that "any physiological or biological limitations that block the learning of a first language will similarly block the learning of a second language (Spolsky, 1989, p. 89 as cited in Guron and Lundberg, 2000, p. 42). Furthermore, in parallel with this, as it has been pointed out in the section of causes (see 2.2.1.), the nature of English as an opaque language with an inconsistent alphabetic orthography might suppose second language learning problems for dyslexic learners (Landerl et al., 2012, pp. 687-8; Jiménez et al., 2009, 168; Lundberg, 2002, p. 179; Goswami, 2002, p. 149).

In relation to the previously mentioned challenges, Kromos and Nijakowska (2017) highlight and suggest that "language learners and multilinguals with SEN need to be taught using inclusive teaching and practices and be provided with individualized support (Kormos & Nijakowska, 2017, p. 31). In line with this, in many educational contexts around the world including the Catalan educational system encourage schools and teachers to follow the Universal Design for learning (UDL)—a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn. The guidelines this framework provides invite teachers to offer multiple means of engagement, representation, and action and expression[11].

Nevertheless, this study upholds that the UDL guidelines would work best if they include, as proposed by Kormos and Nijakowska (2017), well-designed initial training and continuous professional development opportunities for teachers (Kormos & Nijakowska, 2017, p. 31). As the researchers highlight, these two elements are key to the teachers' success in addressing and satisfying the dyslexic students' needs (Kormos & Nijakowska, 2017, p. 31; Ferrer & Bengoa, 2014, p. 206; Nijakowska, 2020, p. 263). They added that this training should be aimed at preparing teachers for working in inclusive classrooms, enhancing their knowledge and skills, boosting their self-efficacy beliefs and developing

[10] Go to pages 10-13 of the digital copy of the handbook through the following link: http://xtec.gencat.cat/web/.content/alfresco/d/d/workspace/SpacesStore/0046/483a6539-df05-4969-ab94-2dd4ff3a5233/dislexia-eso.pdf

[11] For more information about the UDL, visit the following link: https://udlguidelines.cast.org

and sustaining positive attitudes (Kormos & Nijakowska, 2017, p. 30, 31). To prove the effectiveness of this suggestion, they made research on the benefits of online courses about implementing inclusive language teaching practices about dyslexia[12]. Through this, they have found that these courses can help language teachers gain more positive attitudes, higher self-efficacy beliefs and lower concerns—traits that all lead to a better provision of inclusive practices whereby dyslexic students' individual needs will be addressed and satisfied. As a concluding remark, they recommend that special courses should be incorporated into pre- and in-service language teacher training (Kormos & Nijakowska, 2017, p. 38).

Unfortunately, as Nijakowska (2014) and Ahmad et al. (2018) observed, many educational systems and language education schemes offer "scant" initial training and continuous professional development opportunities (Kormos & Nijakowska, 2017, p. 31; Ahmad et al., 2018, p. 2177). According to Joshi et al. (2009) and Goldfus (2012) "this insufficient and/or inadequate initial training" functions as one of the main factors of the limited knowledge about inclusive practises and effective intervention programmes (Joshi et al., 2009 and Goldfus, 2012 as cited in Kormos and Nijakowska, 2017, p. 31), which, as previously mentioned, are crucial to accommodate the needs of the dyslexic students in the EFL classrooms (Nijakowska et al., 2018).

In the Catalan educational context, although there exist numerous handbooks provided to teachers, research on the knowledge of language teachers, or even teachers from other subjects, is scarce, and almost non-existent This lack of studies can possibly serve as an identifying factor of how dyslexia and dyslexic students have not yet received the attention they deserve. Furthermore, this can also work as a signal for researchers in Catalonia, especially those who specialize in education, language pathologies, and in inclusive learning to start to dig into this issue.

4. Research Objectives and Questions

As it is emphasized throughout the theoretical background, it is estimated that dyslexia affects 1 in 5 students and the diagnosed dyslexic learners, even those who are still undiagnosed but show most of the symptoms discussed above, need an EFL teacher with sufficient knowledge of the nature of this language-based learning difficulty and the strategies and interventions to address these students' specific necessities (Nijakowska, 2020, p. 263). Moreover, Aladwani and Al Shaye (2012) and other researchers are convinced that FL teachers' knowledge of the complex nature of dyslexia and mastery of explicit reading instruction principles, phonological awareness, orthographic awareness and phonics can highly increase the self-confidence in creating and working in inclusive contexts and in "providing dyslexic FL learners with instruction appropriately adjusted to their educational needs and abilities (Aladwani and Al Shaye, 2012; Moats, 2009; Moats and Foorman, 2003; Washburn et al., 2011 as cited in Nijakowska, 2020, 264). Nevertheless, to the best of our knowledge, no previous research has examined how prepared EFL Secondary teachers in Barcelona are with respect to dyslexia, its intricate nature, and language teachers' application of the most recent and effective specific strategies and interventions to address dyslexic students' needs. As a consequence, this study is designed and is aimed at gathering information about the following research questions:

[12] This free online course is available in the following link: https://www.mooc-list.com/course/dyslexia-and-foreign-language-teaching-futurelearn.

1. How much EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it?
2. What are the most and least common strategies they use to assist dyslexic learners?
3. What do Foreign Language Teachers in Barcelona Spain think concerning the idea of implementing specialized Teacher training about Dyslexia?

The answers for these queries will help to indicate what Secondary schools in Barcelona, most especially, the EFL teachers, possess, lack and need to facilitate the foreign language learning experience of dyslexic students. Apart from collecting data, this questionnaire has another purpose which is to provide and share basic and up-to-date information about dyslexia and the strategies and interventions they can use when addressing dyslexic students' needs.

5. Methodology

The methodology for data collection used in this research is mixed-method, where both the quantitative and qualitative methodologies are integrated. In a more abstract explanation, this methodology is what Riazi (2016) calls as "within-strategy mixed data collection" through which both qualitative and quantitative data can be collected via one instrument, which in this particular case, is an online questionnaire (Riazi, 2016, p. 20). As will be elaborated in detail in section 5.2., the questionnaire used includes both closed- and open-ended items allowing the collection of both quantitative and qualitative data for mixed-methods purposes.The reason for using a mixed method is mainly that the quantitative method, through pie charts and diagrams, can easily project information, such as the number of the participants who have participated in any initial training or professional development sessions on teaching languages to dyslexic students, the number of participants who have any experience working with/teaching students with dyslexia and those who suspect they have dyslexic students. Therefore, the quantitative method is used, as it facilitates the process of analysing the data gathered. Moreover, the qualitative method is beneficial for the research as it helps to implicit more strategies and interventions teachers use that are not included in the questionnaire.

Analysis of the collected data was then carried out by representing it visually with pie charts and diagrams. Some tables of quantitative data are also presented. The open questions included in the survey were analysed and categorised according to their content.

5.1. Participants

There were 28 respondents to the online questionnaire and 20 (71, 4%) of them are female and the other 8 (28,6 %) are male. They all come from the Catalan education system, but from different types of schools: 13 of them are from subsidized (concertat) schools followed by 12 public school teachers, 1 private teacher and other two teachers who work in a Teacher Training Centre and a freelancer. 22 (78.6 %) of these EFL teachers have more than 10 years of teaching experience. Next to this, 5 (17.9 %) EFL High School teachers have between 6-10 years and, finally, 1 (3.6 %) of the 28 respondents has less than 5 years in the field.

In addition, the data indicates that participants taught in different years of secondary school education known as "cicle": first, second and third "cicle". The result shows that there are teachers who have a

group in each "cicle" meaning that they teach from 1st year students to Batxillerat students. Whereas others are assigned to teach a specific "cicle". For instance, only 1st year and 2nd year ESO students, or only 3rd Year or 4th year ESO students (see Appendix 5, image 4).

5.2. Instrument

Quantitative and qualitative data were collected via an online questionnaire using Google Form and consisting of four main sections: (1) a biographical part to collect professional information about the participants, (2) a TRUE or FALSE series of questions to indicate the participants' knowledge about dyslexia, (3) a series of statements to be rated with a Likert scale of 1-5 to indicate strategies and interventions they know and use to support dyslexic students and (4) a final statement regarding their opinion by rating how strongly dis/agree they are with the need for implementing specialized teacher training about dyslexia (See appendix 3)[13]. An estimated 15-20 minutes was required to complete the questionnaire.

The first section of the questionnaire includes eight background questions that ask the school's name and type of school where the participants teach, the courses they are teaching, their teaching experience, and prior training and experience in teaching students with dyslexia. This section finishes with an exercise where students are asked to indicate on a scale of 1-5 what they believe their knowledge of dyslexia is. In terms of the second section, the participants are asked to carefully read all the fifteen sentences and, according to their knowledge, choose an answer whether they think the sentences are True or False and if they are not sure, they can choose the last option. Securing to have a more or less reliable result, a simple note reminding the participants to be honest is written in the instruction. Additionally, the importance of reading all the sentences from this True or False exercise stems not only from the objective of gaining data for the research but also from the attempt to help teachers gain some primary but essential understanding on the nature of dyslexia (e.g., definition, causes, typology, symptoms), on some of the problems dyslexic students have when learning in a foreign language classroom (e.g., informing them that opaque languages such as English bring difficulties to the FL learning process of dyslexic' students) and some strategies and interventions (see appendix 3). It must be highlighted then that, as all the sentences included in this section are anchored in the most recent studies on dyslexia, all the answers are True and that EFL teachers who will participate in this study will receive a copy of their answers with a note encouraging them to reread the sentences from this section to be able to show more awareness when helping dyslexic students.

Moreover, the third section revolves around the most strongly suggested and effective strategies and interventions when helping students with dyslexia in an EFL classroom. The task consists of rating how likely an EFL teacher knows and uses the following strategies and interventions to support dyslexic learners in their EFL classroom. In parallel with the previous exercise, all the information included in this section pivot on recent studies such as the principles of accommodations in foreign language teaching in Cimermanova´s (2015, p. 43), the project *DysTEFL: Dyslexia for Teachers of English as a Foreign Language* by Nijakowska et al. (2013), Friedmann and Coltheart's (2018) suggested dyslexia type-specific strategies among others (see Appendix 3). Apart from the Likert scale exercise, there is also an open question that asks teachers to write down other strategies and interventions they know or/and use to support dyslexic students.

[13] In this copy of the questionnaire, the name of the researchers are cited.

Finally, the last part of the questionnaire deals with a more personal question whereby EFL teachers are asked to indicate from 1-5 how dis/agree with the following sentence: "I think that it is important to implement specialized teacher training about Dyslexia in order to lower teachers' concerns about supporting dyslexic students and increase their self-efficacy beliefs and foster a more positive attitude."

5.3. Procedure

The questionnaire was administered online using Google Forms and a link was sent to 240 schools[14] in an email that contained a welcome message, a brief personal background about the researcher and short message asking the recipients to spread the questionnaire link to all the EFL Secondary teachers in their school (see appendix 4). After the first month since the questionnaire is opened and is sent, only eight responses were received. To solve this issue and for this research to have more validity, the link was also sent to university teachers and research teams who specialised in Secondary Education and language teaching. In addition, the questionnaire was also sent to Associació de Professors d'Anglès de Catalunya (APAC) and Associació Catalana de Dislèxia requesting that they share it with their members. Due to time limitation, the questionnaire had to be closed after a month and a half.

7. Data Analysis and Results

7.1. First Section

To start with, the first section, beginning with question 5 until question 9, will be analysed in detail in order to have a better understanding of the nature of the participants including their personal background and their knowledge and experiences with dyslexic students. In question 5, which asks whether the participants have participated in any initial training or professional development sessions on teaching languages to dyslexic students, the data shows that only 7 (25 %) have had an initial training whereas the other 21 (75 %) inferred that they have not participated nor attended any initial training (see appendix 5, image 4). Going beyond these numbers, the data indicates that within the 25 % who were able to receive initial training, four of them are from subsidized schools, two are from public schools and one teacher from a private school. Interestingly, it has been observed that there are four teachers who come from the same school, yet only one of them received prior training.

Question 6 of this section concerns the participants' experience working with/teaching students with dyslexia. A total of 25 participants (89.3 %) answered positively stating that they had had prior experience. Two participants responded with no experience while one's response was unsure. Apart from their previous experience and encounter with dyslexic students, the participants are also asked if they suspect having students with this language-based learning difficulty in their EFL classroom during the school year this questionnaire is carried out. The data shows a parallel result with the previous question. That is, most of the teachers who already had experience with dyslexic students believed that

[14] These schools are the ones that appear in the Consorci D'Educació de Barcelona within the following description: "ESO I Batxillerat", "Públic, Concertat i Privat".

they have dyslexic ones in their EFL classroom by the time they filled in this questionnaire. Some of them specifically answered that they know these students personally (see appendix 5, image 6).

Following this, in the last question of this section aimed at gathering information about the self-efficacy beliefs and knowledge of the participants through a Likert scale exercise, half of the 28 participants (53 %) indicated that, on a scale of 1-5, their knowledge is 3 (see appendix 5, image 7). Next to this, there are 7 participants (25 %) who believe that they have a higher level by choosing the scale 4. Then, five participants consider themselves to have the two first elementary levels, i.e., scales 1 and 2. Finally, 1 out of the 28 participants believes that he has the maximum level.

7.2. Second Section: True or False Exercise

In order to check the veracity of the answers to the previous questions, a True or False is created. In this task, the participants are asked to carefully read all the fifteen sentences and, according to their knowledge, choose an answer whether they think the sentences are True or False and if they are not sure, they can choose the last option. Due to its dual-purpose nature—to gather data to see how much EFL teachers know about dyslexia and everything related to it, and to introduce them to the basic but fundamental knowledge about dyslexia— all the answers in this particular task are True. The participants also receive a short message once they finish the questionnaire informing them about the nature of the statements and encouraging them to reread them. On the whole, most of the participants answered correctly. As a consequence, instead of analysing the results of each sentence, the analysis will focus on identifying the sentences that received the highest and lowest Yes, No and Not Sure answers. To have a clearer idea of the number of answers each option got, table 4 is created and is recommended to be used as a guide while reading the following elaborations.

To begin with, sentences containing descriptions typically used when describing dyslexia and dyslexic individuals are the ones that are answered correctly by most of the participants. Take for instance sentence 6 which concerns the description that dyslexia is characterized by difficulty with learning to read fluently and the assumption that dyslexic students tend to spell words wrong, the data shows that only one out of the 28 participants answered it incorrectly. Analogous results are gained in sentences 8, 10, 12, 13, and 14.

What is more, affirmations such as the ones in sentences 3 to 5 divided the participants and led many of them to make mistakes. For example, in the sentence stating that dyslexia is a developmental condition, as it is affected by environmental causes such as the native language of the dyslexic individual, the school, the wider educational environment, more than the half of participants (18 out of 28) answered it incorrectly believing that it is a false statement. A parallel result is what can be observed in sentences 3 and 4 that focus on the cross-cultural, chronic, lifetime nature of dyslexia and its neurobiological and genetic traces.

Paying attention to the amount of Not Sure responses, it is noticeable how truthful the participants' answers are, as, in some cases, instead of stating that a sentence is false, they preferred not to do so. Examples of these include the data from sentences 7, 9, 10 and 15. To illustrate, when analysing the results of sentence 15, which deals with persistent problems dyslexic children have in tasks reliant on the phonological system such as phonological awareness tasks, short-term memory tasks and speeded naming tasks, it can be observed that the participants are also divided, as it led 5 of them to answer it incorrectly and 9 to be unsure.

SENTENCES	TRUE	FALSE	NOT SURE
1. Dyslexia is normally defined either as a learning disorder or a learning difficulty.	20	4	4
2. In the educational context, dyslexia can be defined as a difference in information processing.	21	4	3
3. Dyslexia is a cross-cultural, chronic, lifetime condition which cannot be outgrown and typically persists in adulthood.	11	13	4
4. Dyslexia has neurobiological and genetic traces.	15	11	2
5. Dyslexia is a developmental condition, as it is affected by environmental causes such as the native language of the dyslexic individual, the school, the wider educational environment.	6	18	4
6. Dyslexia is characterized by difficulty with learning to read fluently and dyslexics students tend to spell words wrong.	27	1	0
7. There are many types of dyslexia and to know these types can lead to a better intervention.	20	1	7
8. Dyslexia can co-occur with another disorder (Dyspraxia, ADHD, mild depression and anxiety).	26	2	
9. In the educational context, reading difficulties of dyslexic students are seen as accompanying symptoms rather than the core condition, implying that they can thrive in certain educational contexts.	19	2	7
10. Dyslexic Learners' L2 learning and performance in the L2 classroom can be further diversified (boosted or inhibited) by the affective and cognitive factors as well as dynamically interacting environmental influences.	21	0	7
11. Learning a Second language with inconsistent orthographies (e.g., English) is more difficult than with consistent orthographies (Italian, Spanish).	18	5	5
12. All dyslexics are not the same, thus, it is important to use different strategies that fit their specific needs.	25	2	1
13. Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies]	26	1	1
14. Intervention programs that emphasize the phonological aspects of language with the visual support of letters	23	0	5
15. Dyslexic children have persistent problems in tasks reliant on the phonological system such as phonological awareness tasks, short-term memory tasks and speeded naming tasks.	14	5	9

Table 4. Section 2: True or False Results

7.3. Third Section: Strategies and Intervention Exercise

Data collected and analysed from the third part indicated that depending on specific factors such as the teachers' schools, years of experience among others, one participant is very likely to choose one among the three scales: highly likely, neutral or highly unlikely. To illustrate this, as it is presented in Table 5, summing up all the answers each scale (1-5) received from the 14 strategies

and interventions, the scale that got the highest amount is the 5th one (i.e., Highly likely) with a total of 119 votes out 392 and it is followed by the 3rd scale (i.e., neutral) with only more than 20 votes lesser than the Highly likely scale received. The third highest is the Highly unlikely scale with 83 votes.

Scales	1	2	3	4	5
Total votes that each scale received on the 14 strategies (i.e., out of 392 total votes)	83 / 392	31/392	94 /392	66 /392	119/392

Table 5. Votes each scale received

After the general overview of the results, a detailed interpretation of it should be carried out. To start with, the data from the strategy linked to organisation, the participants are likely to choose the right-hand side of the scale, i.e., from neutral to highly likely. It is of interest to note that from the three organisational ideas to help dyslexic learners, the neutral and highly likely scale tied twice receiving 8 votes each (see appendix 5, image 9) and this may be due to how common this strategy is for teachers, as it is also applied to other non-dyslexic students. Moreover, in relation to the strategies linked to facilitating students' accomplishment of written tasks the data indicates that the neutral scale maintained its prevalence amongst the participants especially in the second and third strategy where teachers are suggested to provide glossary, outline and copy the lecture and provide additional practice (see appendix 5, image 10). The only discrepancy is that, unlike the results of the organizational strategies, in the written-related strategies, the highly unlikely scale received more votes.

Next to these two, the usage of dyslexia friendly fonts such as Comic-Sans, Sylexiad, OpenDyslexic is not frequent to many of the participants, as out of the 28 respondents, 8 of them highly unlikely use or know it. It is true, however, that, to some extent, there is a balance in the results, because if scales 1-2 and 4-5 are totaled, both of them equaled 12 participants each. A similar result is shown in Total Physical Response (TPR) whereby the scale with the highest number of participants is scale 1, however, when adding scales 1 and 2 and scales 4 and 5, the total participants who opted for scales 1-2 are 10 and the ones who chose scales 4-5 are also 10. The only difference is that in the TPR strategy, 8 EFL teachers believe that they use it in a neutral manner.

In contrast, the data linked to the strategy which allows time flexibility to dyslexic students indicates that the majority of the participants (26 out of 28) know and apply it. This, in comparison to all the results from all strategies and interventions, is the mostly known and used strategy by EFL teachers. Following the time-related strategy, a high number of participants, 11 out of 28, change the font's spacing settings to directly increase the average reading efficiency of low-progress readers. Unfortunately, this high number contrasts with the votes the first scale received which is 9.

Furthermore, there are three strategies and interventions that received an analogous result in which the right-hand scale (3-5) is more frequent. These strategies include (1) the idea of encouraging dyslexic students to use metalinguistic strategies, (2) the employment of Multi-Sensory Approach and (3) the use of Mind-Mapping. As it is demonstrated in appendix 5, images 13-15, scales 3 and 5 received almost uniform results ranging from 8 to 9, whereas scale four is between 4-7. This tendency of the participants to opt for the Highly likely direction ends in the strategy of using speech-to-text software (e.g., Voki)—

a strategy where most of the participants admit they highly unlikely know it or use it. To clarify this, scale 1 received 12 of 28 participants, followed by scale 3 with 7 and finally scale 2 with 5. This strategy can be deemed as the less frequently known and used by the respondents.

Finally, with the open question where teachers are asked to write down other strategies and interventions they know or/and use to support dyslexic students, 6 of the 28 participants responded. The strategies they provided centred on three aspects: (1) the actions teachers should take before deciding on what to do, (2) the importance of spoken and useful written interventions, and (3) tips on how to make students be successful in exams. In relation to the first strategy, one of the participants humbly said that she asks for advice from their school's psychologist. Two participants also highlighted the effectiveness of providing dyslexic students more listening and oral interventions rather than written ones. However, one of the participants believed that written and, to some extent, reading interventions can also be useful to dyslexic learners and they can facilitate it by bolding important words. Finally, one of the participants focused on strategies that can help dyslexic students succeed in exams. This includes reading aloud all the activities the students must do before taking an exam, checking that they have completed and understood every activity once they hand it in, and by marking differently their spelling skills.

7.4. Fourth Section: Special Training

In this section, EFL teachers who took part in this research are asked on their view of whether it is important to implement specialized teacher training about dyslexia in order to lower teachers' concerns about supporting dyslexic learners. 93 % of respondents strongly agree with the idea and the other 7 % went for the neutral standpoint

8. Discussion

In general, the results were positive in that they demonstrate that EFL High School teachers in Barcelona do know more about dyslexia than originally presumed by this researcher. To illustrate, in the first section of the questionnaire, placing more emphasis on questions 5-9, the data shows that a high number of EFL Secondary Teachers in Barcelona have not yet received any special training about dyslexia. Nonetheless, the possibility of having a dyslexic learner is extremely high, as almost all the participants admit they have had students with this language-based learning difficulty and that during the school year when this research is carried out, many of them are aware and some suspect that they have dyslexic students. The lack of prior training and knowledge to help dyslexic learners goes hand-in-hand with the teachers' self-efficacy beliefs, knowledge and confidence which is intermediate.

The results from the True or False exercise indicate that for the most part, teachers in Catalunya (albeit our sample is small), are aware of dyslexia and the needs of dyslexic learners. Nevertheless, it can be observed that some of the participants made mistakes even with the basic affirmations about dyslexia such as its neurobiological and genetic traces and the strong influence the dyslexic learners' environment have on them including their native language, the school and the wider educational environment. Other participants are also unsure concerning some research-based statements such as the typology of dyslexia and the importance of knowing these several types that will lead to a better intervention (Friedmann & Coltheart, 2018), the persistent problems of dyslexic students in tasks reliant on the phonological system such as phonological awareness tasks, short-term memory tasks and

speeded naming tasks (Goswami, 2002, p. 149), and the affirmation that dyslexic learners' L2 learning and performance in the L2 classroom can be further diversified (boosted or inhibited) by the affective and cognitive factors as well as dynamically interacting environmental influences (Kormos, 2017 as cited in Nijakowska, 2020, p. 262).

These results give insights into the first question of this research concerning how much EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it. Generally speaking, it can be said that the EFL Secondary teachers in Barcelona's perceived level of knowledge is intermediate and that their school type does not have significant relevance on whether they are more knowledgeable on the issue or not. Nevertheless, it is true that in some cases, a group of teachers, despite working in the same school, do not have the same knowledge about dyslexia, as some of them show more interest in it by taking a private course to dig into this issue. Moreover, this result might also work as supporting evidence for the assumption made by Malinen et al. (2013) that poses that teachers' experience in teaching students with SEN, or in this particular case, dyslexics, can make them gain a better self-efficacy belief and a more positive perception of what they know concerning dyslexia. The reason is that, even though there is only 25 % who received special training, many of them were able to identify most of the affirmations (Malinen et al., 2013 as cited in Kormos & Nijakowska, 2017, p. 32).

In relation to the strategies and interventions, the data displays quite a positive result as it is seen that EFL Secondary teachers in Barcelona are highly aware of and implement most of the14 strategies and interventions included in the questionnaire. Answering the second question of this research— What are the most and least common strategies, if any, that they use to assist dyslexic learners?—, all in all, the three most frequently known and applied strategies and interventions are the ones linked to time flexibility, organisation and facilitating their written tasks. This reflects the ordering of the summarized version of Nijakowska et al's handbook entitled *Foreign language teacher training on dyslexia: DysTEFL resources* (2016) created by Cimermanová (2015, p. 44) where organisation and time flexibility are the ones to head the list. On the contrary, the two most highly unlikely to be recognized and employed strategies and interventions by the participants are connected to the use of technological tools such as the speech-to-text software (e.g., Voki) and the activation of dyslexia-friendly fonts such as Comic-Sans, Sylexiad, OpenDyslexic. This finding might also support the need to examine the technological competence of Secondary Teachers in Barcelona, especially the ones who have more than 10 years of experience—something that the Catalan Department of Education will be launching in the following years.

Finally, the results of the final question regarding what Foreign Language teachers in Barcelona Spain think about the need to implement specialized Teacher training about dyslexia sheds light on two elements. First, it demonstrates the urgency of implementing such special training to facilitate EFL Secondary Teachers' privilege to address and satisfy the individual needs of dyslexic students in their EFL classrooms. Second, this also serves as a proof of the veracity of the responses in the first section of the questionnaire concerning whether the participants have received prior training whereby 21 (75 %) admitted they have not.

All in all, the findings of this study show that, although a high number of EFL Secondary Teachers in Barcelona have not yet received any special training about dyslexia, it can be concluded that they are aware of this language-based learning difficulty and the needs of dyslexic learners. It has also been highlighted how the data displays quite a positive result in terms of the participant's knowledge and application of the 14 strategies and interventions included in the questionnaire. In terms of the most and

least common strategies, the three most frequently known and applied strategies and interventions are the ones linked to time flexibility, organisation and facilitating their written task, whereas the least ones are connected to the use of technological tools such as the speech-to-text software (e.g., Voki) and the activation of dyslexia-friendly fonts such as Comic-Sans, Sylexiad, OpenDyslexic. Despite the awareness of the participants' about dyslexia and the numerous ways to help dyslexic learners in their EFL classrooms, the majority of them believe that an implementation of specialized Teacher training about dyslexia is necessary.

9. Conclusions

In this paper, a detailed exploration of what dyslexia is is carried out emphasizing its intricate nature starting from the definitions it has received throughout time, its causes, symptoms and diagnosis that led to the unravelling of its different types.

It has been highlighted how complex to define this word is due to the various conceptualisations it has received from various research fields. Studies infer that until the 1950s, developmental dyslexia was described as a hereditary visual disability (Gayán, p. 7; Stein, 2018, p. 1). However, this notion radically changed after the development of the phonological theory of dyslexia and the cognitive approach where it is no longer perceived neither a disease nor a dysfunction but a learning difficulty/disability or even a difference in information processing. This paper, however, agreed with Tønnessen's assumption (1997) arguing that the multiplicity of definitions is not a problem believing that "we need clear and useful definition[s]" and that "we do not necessarily need only one definition to be used in all circumstances, just as we do not necessarily need only one hypothesis for everyone who wants to do serious research" (Tønnessen, 1997, p. 88). Hence, instead of using one definition, throughout this paper, some of the concepts are alternatively utilized including "language-based learning difficulty, disability, or disorder" and "difference in information processing".

Moreover, delving into the causes of dyslexia, four widely accepted causes are visited: the neurobiological factor, cognitive factor, educational factor and environmental factor. Alongside these four, special attention is drawn to the co-morbidity factor supported by Łodej (2016), Peterson & Pennington (2012) and Moll et al. (2020), a factor that suggests that developmental learning difficulties such as developmental dyslexia can co-occur with other disorders such as Dyspraxia, ADHD, mild depression (dysthymia) and anxiety (Łodej, 2016; Peterson & Pennington, 2012, p. 1997; Moll et al., 2020, p. 1; Chisom, 2016, p. 9, 10). However, these causes, as Nijakowska (2020) points out and with which this paper agrees, should be treated more as probability rather than certainty (Nijakowska, 2020, p. 258) implying that they are not the only determining factors that can lead a person to have dyslexia, and it also emphasizes that the causes of this learning difficulty are still an open field of investigation (Libera, 2015, p. 13).

In connection to the symptomatology, the cognitive symptoms discussed and explored in detail in Lodej's article (2016) are given more privilege, as it encompasses many findings of other research papers. These cognitive symptoms involve the areas of cognitive weakness: short term memory, phonological skills, sequencing and structuring of information, perception and movement (Moody, 2004; 2007; Fawcet and Roderick, 1993 and Snowling, 2006 as cited in Łodej, 2016, 3). In addition, specific challenges, mostly reading and writing difficulties were underscored through a table. Finally, it is emphasized that disparities also exist amongst dyslexic individuals meaning that some of them might exhibit some symptoms that others do not—a notion that functions as a triggering factor of why

some scholars such as Friedmann and Coltheart (2018) indulged themselves in trying to find out the subtypes of developmental dyslexia.

Next to the symptoms, a special emphasis is given to the early identification of dyslexia—an element that many professionals advocate believing that it facilitates the planning of appropriate interventions and will lead the dyslexic individuals to be provided with appropriate intervention and treatment, which enables them to function properly in society (Łodej, 2016. p.1). Additionally, special attention is drawn to the existence of many tests designed to facilitate the detection of dyslexia and its downsides, especially their limitations when it comes to detecting all types of this language-based learning difficulty.

In line with the preceding sections, an exploration of some of the recent studies on the two types of dyslexia, developmental dyslexia and acquired dyslexia, is undertaken. Additionally, this paper went beyond by entering the proposed classification of types of developmental dyslexia according to Friedmann and Coltheart (2018) that have far-reaching implications theoretically, clinically and educationally speaking (Friedmann and Coltheart, 2018, p. 28, 29).

Furthermore, a huge number of approaches, strategies and interventions were designed and proposed as a consequence of the continuous and increasing number of research papers conducted on dyslexia. Therefore, this paper compiled a list of the most cited approaches and specific strategies and interventions that are likely to be helpful to all students, not only those who are dyslexic. Prior to this compilation, it was mentioned that the effectiveness of each strategy depends on many factors such as the type of dyslexia an individual has, their environment and even the attitude and self-efficacy of the people who provide these suggested interventions, mostly teachers (Crombie, 2003, p. 1; Kálmos, 2011, p. 10; Nijakowksa, 2020, p. 264; Kormos & Nijakowska, 2017, p. 31).

After shedding light on what dyslexia is, this paper dealt with the relation between dyslexic learners, inclusive learning and EFL teachers' self-efficacy beliefs, attitude and concerns. In this association, it has been stressed that a positive EFL teachers' self-efficacy beliefs, attitude and concerns results in much more efficient actions providing a positive inclusive learning experience for dyslexic learners. Nevertheless, studies such as those that Nijakowska (2014) and Ahmad et al. (2018) conducted found that many educational systems and language education schemes offer "scant" initial training and continuous professional development opportunities (Kormos & Nijakowska, 2017, p. 31; Ahmad et al., 2018, p. 2177). In line with this, it has been discovered that in the Catalan educational context, although there exist numerous handbooks provided to teachers, research on the knowledge of language teachers, or even teachers from other subjects, is scarce, and almost non-existent. This inefficiency is what motivated the research to be conducted. In this research three questions were answered: (1) How much do EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it? (2) What are the most common strategies, if any, that they use to assist dyslexic learners? (3) What do Foreign Language teachers in Barcelona Spain think about the need to implement specialized Teacher training about Dyslexia? Generally speaking, these three questions are aimed at considering what secondary school teachers in Barcelona know and do regarding dyslexia in EFL classrooms using mixed-method research.

Answering the first research question, the perceived level of knowledge of the EFL Secondary teachers in Barcelona is intermediate. The results also show that there is no correlation between the school type and the preparedness of teachers, as it has been seen that in a group of teachers working in the same school perceive different levels of knowledge and in particular cases, only 1 of 4 had had a special

training. Moreover, an interesting secondary finding is that the results can be deemed as supporting evidence for Malinen et al.'s assumption (2013) that poses that teachers' experience in teaching students with SEN, or in this particular case, dyslexics, can make them gain a better self-efficacy belief and a more positive perception of what they know concerning dyslexia. The reason is that, even though there is only 25 % who received special training, many of the 28 participants were able to identify most of the affirmations (Malinen et al., 2013 as cited in Kormos & Nijakowska, 2017, p. 32).

Moving on, the answer to the second research question is that strategies and interventions that are linked to time flexibility, organisation and facilitating their written tasks are the most frequently acknowledged and applied by the EFL teachers. Whereas the least well-known and applied strategies and interventions are the ones that are connected to the use of technological tools such as the speech-to-text software (e.g., Voki) and the activation of dyslexia-friendly fonts such as Comic-Sans, Sylexiad, OpenDyslexic. It has been highlighted that this finding might also support the need to examine the technological competence of Secondary Teachers in Barcelona, especially the ones who have more than 10 years of experience—something that the Catalan Department of Education will be launching in the following years.

Finally, the responses received for the final question show that teachers strongly agree with and support a possible implementation of special training about dyslexia. Apart from that, the results can be interpreted as a clear message from teachers that this possible implementation is extremely necessary to facilitate EFL Secondary Teachers' privilege to address and satisfy the individual needs of dyslexic students in their EFL classrooms. Additionally, this also serves as proof of the veracity of the responses in the first section of the questionnaire concerning whether the participants have received prior training whereby 75 % admitted they have not.

In conclusion, this study highlighted that although a high number of EFL Secondary Teachers in Barcelona have not yet received any special training about dyslexia, many of them have proved through their answers that they are aware of this language-based learning difficulty and the needs of dyslexic learners. Nevertheless, if teaching a "normal" class with no SEN students already brings challenges to teachers, how much more if they have dyslexic students who deal with their daily learning difficulties and problems? This accentuates that the current state of the teachers' awareness of dyslexia and the different strategies can be taken to the next level. In other words, if teachers can make themselves relatively aware of this issue without having received any special training, then implementing these professionally enriching training and workshops can improve their knowledge and their ways to intervene and to address the necessities of dyslexic students to help them to succeed not only academically, but also in bigger contexts. Furthermore, the main contribution of this study is to start to delve in the underinvestigated area of research whereby High School (English) language teachers' knowledge concerning dyslexia and the most commonly used strategies are being examined. This also invites and strongly encourages other researchers and schoolteachers to be acquainted to and, at the same time, familiarized themselves with dyslexia and the importance of always assuring that they practice inclusive teaching and addressing the needs of their dyslexic students.

10. Limitations

Despite the success of the research, some fault lines and minor issues should be addressed. First, in terms of the online questionnaire, many of the participants commented that it is very extended and this possibly led some teachers not to answer it. As a way of improving it for future iterations, the

questionnaire will be made shorter. For example, instructions will be simplified and instead of providing 15 statements in the True or False exercise, 5 of them can be eliminated. Another issue that must be pointed out is that, although the answers from the 28 respondents provide interesting insights into dyslexia and the knowledge of EFL High School teachers in Barcelona, a larger number of participants would provide more diverse and potentially reliable data. From this experience, it is learnt that one of the problems a researcher might face is the difficulty of finding participants and that there is a necessity to draw attention even to the slightest detail as they can have repercussions on the overall result of the study being performed. Other limitations have to do with time constraints and the situation of teachers in Barcelona during this study, as the questionnaire was sent during a period when most of them were busy with periodical examinations and strikes. There are also some ethical and privacy issues due to the General Data Protection Regulation. These limitations will be taken into account in future research.

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Appendix 1: *Protocol d'Observació per a Detectar Indicadors de la Dislèxia en l'Educació Secundària Obligatòria- ESO*

Nom de l'alumne _____ Curs escolar _____

Data de naixement _____ Data de valoració _____

Nom del tutor _____

ETAPA	ÍTEMS	SÍ	NO
EDUCACIÓ SECUNDÀRIA OBLIGATÒRIA - ESO	**Aspectes generals**		
	1. Té antecedents familiars amb dificultats de lectura i escriptura		
	2. Mostra discrepància entre el rendiment cognitiu i l'acadèmic		
	3. Es dóna una diferència significativa entre el treball oral i l'escrit		
	4. S'observa discrepància entre la comprensió lectora i la comprensió oral		
	5. Presenta un decalatge entre l'esforç i els resultats		
	6. Presenta un rendiment acadèmic fluctuant		
	Aspectes específics		
	7. Presenta dificultats d'accés al lèxic quan parla		
	8. Mostra dificultats per sintetitzar el que vol explicar		
	9. Té dificultats per narrar i organitzar experiències		
	10. Li costa retenir una sèrie de consignes orals		
	11. La seva lectura és lenta respecte del grup classe		
	12. Quan llegeix fa errors de repetició, rectificacions, substitucions...		
	13.Té dificultats per llegir paraules d'ús poc freqüent		
	14. Evita llegir en públic		
	15. Li costa entonar quan llegeix. No respecta les pauses		
	16. Obté resultats baixos en les proves de selecció múltiple		
	17. La seva lectura és poc eficaç per a l'estudi		
	18. Mostra dificultats per extreure la idea principal d'un text		
	19. Presenta dificultats de comprensió lectora		
	20. Té una escriptura descuidada i en ocasions il·legible		
	21. Evita escriure sempre que sigui possible		
	22. Presenta errors ortogràfics propis d'etapes molt inferiors		
	23. Té dificultat per prendre apunts		
	24. Li costa planificar i redactar textos		
	25. Les seves respostes escrites són pobres i inacabades		
	26. Té dificultats en l'adquisició de llengües estrangeres		
	27.Mostra poca capacitat d'autocorrecció en l'escriptura		
	28. Comet errors de morfosintaxi		
	29. Presenta dificultats en el càlcul mental		
	30. Li costa automatitzar els símbols matemàtics		
	31. És poc eficient en el procediment que ha d'utilitzar per a la resolució de problemes matemàtics		
	32. Li costa memoritzar fórmules, dades o definicions		
	33. Té dificultats en els automatismes: taules de multiplicar, conjugació verbal....		
	34. Mostra poca autonomia a l'hora d'estudiar		
	35. Té dificultats per portar l'agenda al dia		
	36. Presenta baixa motivació vers els aprenentatges		
	37. Té queixes físiques sense motiu aparent (somatitzacions)		
	38. És poc eficient en l'organització i planificació de la feina		
	39. Perd materials, treballs, apunts....		
	40. S'oblida fàcilment dels llibres, deures...		
	41. Li costa començar i acabar les feines en el temps establert (sembla que no aprofita el temps)		
	42. Li manca atenció		
	43. Té una autoestima baixa en les qüestions d'àmbit acadèmic		
	44. Mostra inestabilitat emocional		

Marqueu SÍ o NO segons correspongui

Observacions

INTERPRETACIÓ RESULTATS:

- Les respostes afirmatives en els ítems en **negreta** són indicadors d'alt risc i requereixen una intervenció.
- Les respostes afirmatives en la resta d'ítems (que no estan en negreta) indiquen dificultats associades que poden empitjorar la simptomatologia i que caldrà tenir en compte en la planificació de les estratègies d'intervenció.

8 - PRODISCAT ESO - Col·legi de Logopedes de Catalunya

PAUTES D'ACTUACIÓ PER ALS ALUMNES DE L'EDUCACIÓ SECUNDÀRIA OBLIGATÒRIA - ESO

ORIENTACIONS GENERALS

- En aquesta etapa l'alumne/a ja hauria de tenir un diagnòstic de DISLÈXIA.

- Si no és així i el professor/tutor detecta problemes importants en la competència de la llengua escrita (tant en la lectura com en l'escriptura) haurà d'emplenar el protocol d'observació i si cal, disposar d'un diagnòstic diferencial per descartar o confirmar el trastorn de Dislèxia.

- En el cas que es confirmin les dificultats en la llengua escrita, caldrà actuar en un doble sentit.
  - El més important, fer les adaptacions metodològiques pertinents a cada matèria per assegurar-ne el seu aprenentatge encara que l'alumne no disposi dels recursos de la llengua escrita com un mitjà per assolir-los.
  - Per altra banda, continuar reforçant l'aprenentatge de la llengua escrita i donant estratègies a l'alumne per tal que aquest recurs li sigui funcional.

- Es recomana, doncs, **el segon i el tercer nivell d'intervenció en els casos més greus:**
  - El **2n nivell d'intervenció** requereix que l'alumne tingui un suport addicional –dins o fora del centre educatiu- per aconseguir una lectura i una escriptura el més funcionals possible. Aquest suport es pot donar en petit grup o a nivell individual.
  - El **3r nivell d'intervenció** requereix d'una adaptació personalitzada de la forma d'accés als continguts curriculars i també, en alguns casos, de l'adequació d'aquests. En aquest cas, parlaríem d'un programa individualitzat (PI) que es duria a terme de forma intensiva i durant el temps que calgui, per facilitar estratègies i recursos compensatoris a l'alumne dislèctic i garantir l'assoliment dels objectius curriculars.

ÀMBITS D'INTERVENCIÓ	ACTUACIONS
PERSONAL	• Fer saber a l'alumne que coneixem les seves dificultats, ens interessem per ell/a i l'ajudarem en el procés d'aprenentatge per tal que tingui les mateixes oportunitats que els companys. • Reconèixer les dificultats de l'alumne no vol dir eximir-lo de les seves responsabilitats. • Comprendre que presentar dificultats en el llenguatge escrit pot provocar frustracions, estrès, pressió i cansament que poden conduir l'alumne a actituds poc adequades. • Potenciar l'autoestima i reconèixer en públic els seus èxits • Posar en marxa totes les actuacions necessàries perquè l'alumne no visqui les seves dificultats com un fracàs: respectar el seu ritme, facilitar-li les tasques seqüenciades en passos, reconèixer els seus avenços, no fer-lo llegir en veu alta davant del grup... • Emfatitzar allò que el noi/a fa bé a la classe. Acostumen a ser persones amb molta imaginació i creativitat. Donar l'oportunitat que destaquin en allò que poden. • Evitar situacions que el deixin en evidència davant dels altres: rapidesa de càlcul, escriure a la pissarra, corregir les faltes amb un color estridents, etc.
FAMILIAR	• Cal buscar la implicació de la família: informar-la de les dificultats i donar a conèixer les estratègies i pautes que se seguiran al centre educatiu per facilitar el progrés del seu fill/a. • Facilitar orientacions perquè segueixin mantenint la motivació dels seus fills per la lectura i que aquesta sigui una activitat gratificant. - L'afició lectora és una disposició davant la vida que s'aprèn. És més fàcil que els fills s'interessin per la lectura si els pares intervenen activament en el procés d'aprenentatge.
SOCIAL	• És recomanable informar als companys de les dificultats de lectoescriptura que presenta l'alumne. • Cal treballar a l'aula i amb tots els alumnes el respecte a la diversitat.
ESCOLAR	• Tot l'equip docent ha de treballar de forma consensuada i coordinada per tal de realitzar les adaptacions metodològiques pertinents en les matèries curriculars. El tutor n'és el responsable. • Fer conèixer a tot l'equip docent el trastorn de l'alumne i que pot portar associat altres dificultats de tipus emocional, comportamental o d'aprenentatges. • Conscienciar l'equip docent que la dislèxia no tan sols afecta a les matèries del currículum, sinó altres aspectes com ara l'organització i planificació.

ESTRATÈGIES METODOLÒGIQUES	QUÈ CAL FER?
Referent a l'actitud del professor davant de l'alumne	• Intentar no utilitzar les expressions: "esforça't més", "fixa-t'hi"... La majoria dels alumnes amb Dislèxia s'esforcen però no aconsegueixen els resultats desitjats i per aquest motiu perden l'interès i la motivació. • Cal ser flexible en tot allò que va relacionat amb el seu dèficit: oblidar coses que abans sabia, llegir malament, cometre molts errors ortogràfics.... • Evitar situacions que el deixin en evidència davant dels altres: rapidesa de càlcul, escriure a la pissarra, correcció d'un text per part d'un company, assenyalar les faltes amb un color estridents...
Referent a com donar les consignes	• Evitar donar moltes ordres orals al mateix temp. • Les instruccions escrites haurien de ser clares i concises. Evitar l'ús d'instruccions escrites massa llargues i seqüenciades en molts passos.
Referent als suports	• Presentar els continguts curriculars amb suports variats: visuals i/o auditius (esquemes, mapes conceptuals, power-points, documentals, pel·lícules, pissarra digital amb murals interactius... • Facilitar a l'alumne la utilització de les TIC (lectors informàtics...) • Proporcionar a l'alumne llibres adequats al seu nivell lector. • Potenciar l'ús de la calculadora en tota l'etapa de l'ESO. • Recomanar la construcció de diccionaris personalitzats i digitalitzats. • Ús de llibres digitalitzats.
Altres aspectes a considerar:	
- Reforçament	• Cal una acció tutorial continuada per mantenir l'interès i la motivació vers els aprenentatges.
- Ensenyar habilitats	• Cal centrar l'ensenyament en el desenvolupament d'habilitats útils i transferibles més que en donar molta informació que esdevé innecessària i que l'alumne no pot recordar. • Afavorir l'aprenentatge significatiu i vivencial.
- Metacognició	• Es tracta que l'alumne tingui consciència de les seves dificultats i pugui aplicar estratègies de compensació i autoregulació.
Referent a l'aprenentatge de la llengua escrita:	
- Ensenyar fluïdesa i precisió	• Assegurar-nos que la comprensió no està compromesa per la focalització de la seva atenció en la descodificació de paraules. • Procurar que no llegeixi en veu alta davant dels companys de forma improvisada. • Evitar que l'alumne llegeixi en públic contra la seva voluntat. • Donar suports informàtics, com ara lectors informàtics.
- Ensenyar vocabulari tècnic i/o nou	• Ajudar en la lectura d'un text, facilitant el significat del vocabulari nou que hi apareix. • Intentar ajustar els textos al seu rendiment lector: més breus i amb un vocabulari a l'abast de l'alumne/a. • Seleccionar els textos d'acord amb els coneixements previs de l'alumne. • Oferir exercicis alternatius en el cas que es detectin dificultats importants.
- Ensenyar a comprendre	• Activar els coneixements previs a la lectura. • Ajudar a fer inferències predictives i interpretatives. • Utilitzar la conversa sobre la lectura abans de llegir. • Controlar la comprensió lectora durant tot el procés lector, no només al final de la lectura.
- Ensenyar l'expressió escrita	• Ensenyar a estructurar els textos de diferents tipologies (descripció, narració, exposició...) amb esquemes predeterminats i utilitzant frases curtes però ben construïdes i amb tots els seus elements. • Facilitar plantilles amb els connectors, adverbis, adjectius..., que poden facilitar estructurar els textos escrits. • No corregir de forma sistemàtica tots els errors ortogràfics de la seva escriptura. • Evitar que l'alumne hagi de copiar de la pissarra i facilitar-li, quan sigui possible, el material per escrit. • Intentar que no hagi de tomar escriure sobre el full els enunciats del llibre. • Donar-li temps addicional per completar les activitats. • Permetre la presentació dels treballs fets amb l'ajuda de l'ordinador i el corrector de textos.

ESTRATÈGIES METODOLÒGIQUES	QUÈ CAL FER?
Referent a l'organització, planificació i gestió del temps	• Ajudar-lo en la gestió del temps. • Disposar d'un calendari a l'aula amb les dates de les proves d'avaluació i de lliurament i de projectes o treballs, afavorint que entre ells hi hagi un espai de temps ampli. • Davant de les dificultats d'atenció i/o organització personal, poder utilitzar un sistema amb autoinstruccions d'organització personal. • Fraccionar el treball en períodes curts però intensos per evitar el cansament i afavorir la concentració. • Fer un seguiment de l'agenda. Oferir la possibilitat de consultar l'agenda electrònica del seu curs. • Si és possible, ajudar en l'ordre i la classificació de les feines fetes. • Reduir l'excés de deures en el conjunt de les assignatures, evitant activitats repetitives i/o complementàries però no imprescindibles. • Donar-li temps extra per completar les activitats.

AJUSTAMENTS I ADAPTACIONS	QUÈ CAL FACILITAR
Referent a l'entorn escolar	• Cal tenir en compte la ubicació dins l'aula i procurar que l'alumne estigui a prop del mestre. • Disposar d'un calendari a l'aula amb les dates de les proves d'avaluació i de lliurament de projectes o treballs, afavorint que entre ells hi hagi un espai. • Tenir un calendari verbal i també visual penjat a l'aula per facilitar l'organització i planificació del temps.
Referent a les tasques avaluadores	• L'equip docent ha de treballar de forma coordinada per preveure: dates d'exàmens, d'entrega de projectes o de treballs, amb la finalitat que no se solapin i quedin espaiats en el temps. • Donar a conèixer les dates dels exàmens amb antelació. • Evitar que l'alumne tingui més d'un examen per dia i més de dos per setmana. • Un cop començat l'examen, demanar si necessita que li llegim oralment les preguntes. • Evitar preguntes molt llargues en un examen i preguntes obertes on cal organitzar les idees i expressar-les ordenadament per escrit; és millor utilitzar preguntes concretes. • Avaluar els exàmens i treballs en funció del contingut i no de la forma. • Contemplar la possibilitat de realitzar exàmens orals o amb format més visual. • Permetre que pugui completar les preguntes de l'examen mitjançant dibuixos o gràfics. • Evitar que les faltes d'ortografia als exàmens baixin la nota final, o bé, que siguin motiu de suspens. • Utilitzar colors alternatius al vermell en les correccions (els alumnes poden relacionar aquest color amb el fracàs). • Assegurar-nos de donar el temps que necessiten per demostrar allò que saben i no fer-los treballar de forma precipitada i descuidada per acabar les tasques en el temps encomanat. • Presentar les preguntes d'examen per escrit, mai dictades. • Planejar i tenir en compte alternatives d'avaluació (treballs, projectes, power points). • Evitar fer proves globals de les assignatures en les quals l'alumne té avaluacions aprovades. • Afavorir que puguin preguntar al professor, els dubtes que tinguin en els exàmens. • Evitar exàmens de resposta múltiple.

Referent a les diferents matèries curriculars	ADAPTACIONS
1. Llengua castellana i llengua catalana:	
- Lectura	• Ser conscients que la comprensió lectora moltes vegades està condicionada per les dificultats de descodificació. • L'ampliació del seu vocabulari tècnic està condicionada per les dificultats de la lectura, per la qual cosa es recomana elaborar diccionaris personalitzats per enriquir el vocabulari • Assegurar-nos que ha entès els enunciats. • No forçar a llegir en veu alta. • Si ha de llegir en veu alta a classe, donar-li el text de la lectura amb antelació. • Donar el temps que calgui per llegir.
- Escriptura	• Tenir en compte que la còpia sistemàtica d'errors d'ortografia no facilita l'adquisició de la norma ortogràfica • Entendre que presenti interferències entre totes dues llengües (català -castellà) • Corregir únicament les faltes d'ortografia que s'estiguin treballant a classe o les prèviament pactades amb l'alumne.
- Comprensió de text	• Adaptar el contingut del text, simplificant el vocabulari i/o l'estructura sintàctica. • Subratllar les paraules claus del text o aquelles que indiquen instruccions. • Fragmentar el text i després de cada part afegir les preguntes de comprensió que facin referència a aquell fragment. • Destacar els paràgrafs on pot trobar la informació més rellevant. • Evitar les preguntes de selecció múltiple o de resposta oberta. • Permetre-li que disposi de la gravació del text en àudio en els exàmens de comprensió lectora o utilitzar lectors digitals. • Donar-li més temps per llegir els textos.
- Llibres de lectura obligatòria:	• Reduir i/o escollir adequadament els llibres de lectura obligatòria tenint en compte el seu format i l'interès del noi/a. • Procurar que els llibres estiguin adaptats al seu nivell lector. • Permetre que, en un examen de comprensió lectora, tingui a mà el llibre de lectura o el material que ell prèviament hagi elaborat. • Per facilitar la lectura, es pot anticipar el tema, l'argument, el resum...
2. Matemàtiques	• Valorar el procediment de la resolució del problema i no els resultats de les operacions. • Permetre a l'alumne l'ús de la calculadora, tant a classe com als exàmens. • Assenyalar les paraules clau dels problemes. • Permetre-li tenir a la vista les fórmules, tant a classe com als exàmens. • Cal que tingui el llibre de text o apunts a mà per consultar dubtes.
3. C. Naturals /C. Socials Tecnologia	• Fer un guió a la pissarra amb el contingut del tema que es tractarà. • És recomanable anticipar el vocabulari específic de la matèria. • Plantejar preguntes concretes i de resposta curta. • Reduir vocabulari acadèmic. • No tenir en compte els errors d'expressió escrita i d'ortografia a l'hora de corregir l'examen. • Fer reflexionar l'alumne sobre el que sap i el que aprendrà. • S'ha de fer un treball d'estratègies d'aprenentatge, per tal que l'alumne desenvolupi un major grau d'autonomia. • Fomentar i facilitar la identificació i el subratllat de paraules i conceptes clau dins d'un enunciat o text. • Elaborar mapes conceptual dels temes que ho precisin. • Tenir com a suport en els exàmens, el vocabulari tècnic i específic de la matèria treballada.
4. Llengua estrangera	• Assenyalar els objectius mínims per a l'aprenentatge del vocabulari i gramàtica. • Prioritzar la producció oral. • Permetre-li tenir les regles d'estructuració gramatical i els esquemes dels diferents temps verbals. • A nivell escrit , li costa adquirir les estructures morfosintàctiques. Cal que utilitzi les bàsiques i simples. • No corregir errors en paraules irregulars. • Facilitar l'adquisició i la utilització d'un vocabulari bàsic. • Reduir la quantitat de llibres de lectura obligatòria i adaptar-los al seu nivell lector. • Proposar altres maneres d'aprendre: cançons, pel·lícules... • Permetre-li que utilitzi lectors informàtics.

Appendix 2: Other Strategies, Interventions and Materials

Cimermanová (2015)

Theoretical books :

- Kormos, J. & Smith, A. M. (2012). *Teaching languages to learners with specific learning difficulties*. Clevedon: Multilingual Matters. ISBN 978-1-84769-620-5.
- Nijakowska, Joanna, 2010. *Dyslexia in the Foreign Language Teaching Classroom*. Bristol: Multilingual Matters. ISBN: 9781847692795

Textbooks which support teaching dyslexic learners, e.g.

- English Zone (Teacher's book has a special part Dyslexia: a Guide for Teachers, OUP)
- Solutions, (Teacher's book has a special part on teaching dyslectic learner, Macmillan)

Websites you might be interested in:

DYSTEFL – Dyslexia for Teachers of English as a Foreign Language - http://dystefl.eu/
Dyslexia and Foreign Language Teaching - free online course - https://www.futurelearn.com/courses/dyslexia
British Dyslexia Association - http://www.bdadyslexia.org.uk/educator/modern-foreign-languages
LDonline – The educator's guide to learning disabilities and ADHD - http://www.ldonline.org/article/6065/
TEXT mindmap – a tool to draw mind map - https://www.text2mindmap.com/
Memory game - www.math-and-reading-help-for-kids.org/kids_games/memory_lights.html
Eidetic games and puzzles - http://www.ababasoft.com/games/learning_disability.html
Memory gym - www.memorise.org/memoryGym.htm
Books for dyslexics http://www.quickreads.org.uk/resources
Love reading 4 kids - Dyslexia Friendly Books - http://www.lovereading4kids.co.uk/genre/dys/Dyslexia-friendly.html
Web Design for Dyslexic Users. Retrieved October 25, 2015 from Davis Dyslexia Association International, Dyslexia the Gift Web site: http://www.dyslexia.com/library/webdesign.htm

News:
https://elpais.com/educacion/2021-10-14/los-trastornos-que-afectan-al-rendimiento-escolar-estan-infradiagnosticados-solo-se-detecta-el-10-en-la-publica-y-el-30-en-la-concertada.html

Organizations:
http://fedis.org
https://www.ladislexia.net/definicion/cursos/
https://acd.cat
https://afdacat.org

Government:

https://www.educacionyfp.gob.es/dam/jcr:4f7e9108-88bc-4bf6-b188-34dd6d2c2a7f/atencion-alumnado-dislexia.pdf

http://xtec.gencat.cat/web/.content/alfresco/d/d/workspace/SpacesStore/0046/483a6539-df05-4969-ab94-2dd4ff3a5233/dislexia-eso.pdf
http://xtec.gencat.cat/ca/curriculum/eso/alumnatdislectic/index.html
http://xtec.gencat.cat/web/.content/alfresco/d/d/workspace/SpacesStore/0045/45883090-c211-4e1f-a852-0e056790cc62/PI-_ESO_BATX_dislexia_emplenable_oficial.pdf

Gavin and Reid (2011, p.77) suggest that "one of the main ways of ensuring success for dyslexic pupils is to provide a range of means whereby they can demonstrate their competence. This may not necessarily be through writing, and it is important that other means of displaying competence should be provided. For example:

- Investigation in groups
- Making posters
- Brainstorming
- Sentence completion
- Quiz and competitions
- Videoing
- Worksheet activities
- Drama and role-play
- Fieldwork and enquiring
- Oral presentations
- Self-assessment
- Learning in pairs
- Cartoons and comic strips
- Completing tables
- Tape-recording
- Debating
- Computer work
- Drawing pictures
- Making crosswords
- Journal writing
- Songs and poems

Appendix 3: The Four Sections of the Questionnaire with their References

According to the International Dyslexia Association (IDA), dyslexia affects 1 in 10 individuals, many of whom remain undiagnosed and receive little or no intervention services. In the Spanish context, this estimation is overshadowed, as the prevalence of developmental dyslexia is estimated between 3.2% and 5.9%, respectively to the definition used (Jiménez, Gúzman, Rodríguez, & Artiles, 2009) implying that approximately one in five children will likely experience significant symptoms of dyslexia. These numbers accentuate not only the strong persistence of dyslexia, but also the importance of taking it into account in the educational context. For this reason, this paper aims to shed light on (1) How much EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it? (2) What are the most and least common strategies they use to assist dyslexic learners? (3) What do Foreign Language Teachers in Barcelona Spain think concerning the idea of implementing specialized Teacher training about Dyslexia?

In this questionnaire, you will be participating in this life-changing study on how to support and address the needs of dyslexic learners in the EFL secondary classroom. This questionnaire will be divided into 3 sections:
- A preliminary questionnaire to get information about the nature of the participants
- A TRUE or FALSE exercise that tests your knowledge about Dyslexia.
- An exercise where you rate 1-5 how much you know and use some strategies and interventions to support dyslexic students
- Finally, another exercise where you rate how you strongly dis/agree with the idea of implementing specialized teacher training about Dyslexia.

Section 1:
Participants:

1. Name of School:
2. School Type: Public / Private
3. Teaching experience:
    - Less than 5 years
    - 6-10 Years
    - More than 10 years
4. Courses you are teaching now:
    - 1st Year
    - 2nd Year
    - 3rd Year
    - 4th Year
    - Batxillerat (Senior High)
5. Have you participated in any initial training or professional development sessions on teaching languages to Dyslexic students? (Kormos, Nijakowska, p. 38)
6. I have experience working with/teaching students with dyslexia:
    a. Yes
    b. No
7. Do you suspect that you have dyslexic students in your classroom?
    a. Yes
    b. No

8. I think that my knowledge of dyslexia is
9. On a scale of 1-5 indicate what your knowledge of dyslexia is 1 minimum – 5 maximum.

   1-5

Section 2: TRUE or FALSE

Instructions: In this task, you will have to carefully read all the sentences and according to your knowledge, choose your answer whether you think the sentences are True or False and if you are not sure, choose the last option. Remember, your honesty will lead to the success of this research! Once you finish the whole questionnaire, you will receive both your answers and the correct ones.
[Purpose (not included in the questionnaire): to get an overall result of how much teachers know and at the same, introduce them to the basic and most important ideas and findings about Dyslexia by giving statements that are all true and informing them about it after they finished answering the questionnaire or by sharing with them the results of the "task"]
[Based on some articles]

Statement	TRUE	FALSE	NOT SURE
Dyslexia has neurobiological and genetic traces. [Nijakowska, 259]			
Dyslexia is a cross-cultural, chronic, lifetime condition which cannot be outgrown and typically persists in adulthood. (Nijakowska, p. 259)			
Dyslexia is characterized by difficulty with learning to read fluently and dyslexics students tend to spell words wrong. [36-34]			
Dyslexia is a developmental condition, as it is affected by environmental causes such as the native language of the dyslexic individual, the school, the wider educational environment. [Gymarthy, 2007]			
In the educational context, dyslexia can be defined as a difference in information processing and that reading difficulties are seen as accompanying symptoms rather than the core condition, implying that they can thrive in certain educational environments and fail in others. [Gymarthy, 2007; Ranaldi, 2003]			
There are many types of dyslexia and to know these types can lead to a better intervention.			
Dyslexia is normally defined either as a disorder or a difficulty (Friedmann & Coltheart, 2018)			
Dyslexia can co-occur with another disorder (Dyspraxia, ADHD, mild depression and anxiety) (Lodej, p. 3)			
Dyslexic Learners' L2 learning and performance in the L2 classroom can be further diversified (boosted or inhibited) by the affective and cognitive factors as well as dynamically interacting environmental influences (Kormos, 2017, B as cited in Nijakowska, 262)			
Learning a Second language with inconsistent orthographies (e.g., English) is more difficult than with consistent orthographies (Italian, Spanish). (Goswami 2002)			
All dyslexics are not the same, thus, it is important to use different strategies that fit their specific needs (Crombie, 1)			
Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies [28]			

Intervention programs that emphasize the phonological aspects of language with the visual support of letters are effective for students with dyslexia.			
Dyslexic children have persistent problems in tasks reliant on the phonological system such as phonological awareness tasks, short-term memory tasks and speeded naming tasks. (Goswami, 149, p. 149 [see other names]			

Section 3: How much do you know and use the following strategies and interventions to support dyslexic learners?

Instructions: In this section, you will have to rate how likely you know and use the following strategies and interventions to support dyslexic learners in your EFL classroom.

Highly Unlikely	**1**	**2**	**3**	**4**	**5** Highly Likely

- Dyslexic students need more time for certain activities and thus good organization might save their time. To support them, I (1) provide students with a graphic organizer (charts, blank webs, maps), (2) encourage learners to use graphic organizers (3) encourage use of assignment books or calendars where pupils can record due dates, homework, test dates.
- Dyslexic learners normally have problems with written tasks. To support them, as a teacher, I (1) reduce copying by including information or activities on handouts or worksheets, (2) provide a glossary in content area and/or outline /copy of the lecture, (3) provide additional practice.
- I use **dyslexia-friendly fonts** (Comic- Sans, Century, Sylexiad, Dyslexie, Read Regular, OpenDyslexic (Rello, Baeza-Yates)
- For materials, I **highlight essential information** and use **hierarchical worksheets** where tasks are arranged from easiest to hardest.
- I use explicit teaching procedures (demonstrations, guided practice, corrective feedback and gestures).
- When giving instructions, give **repeated directions** and **check** understanding. If instructions are long and complicated, I use **step-by-step instruction** or break them down into subsets.
- I Clarify or simplify written directions with the samples.
- Use **flexible work times** as dyslexic learners sometimes need more time to complete assignments.
- Place dyslexic students close to the teacher to be able to constantly monitor their progress.
- I encourage dyslexic students to use **metalinguistic strategies** (e.g., to find out why certain expressions are used the way they are) to allow him/her to process the FL language in multi-sensory ways using their strengths to compensate for auditory and or visual weakness.
- I use speech-to-text software such as Voki, as it saves dyslexic students' time and stress. In this software, students dictate the text, and the software transfers it to the written text. Some of them even include games to improve vocabulary and thesaurus. (Cimermanova, 55)
- I employ the Multi-Sensory Approach, as activating and involving more sense may compensate dyslexic learners' visual deficits.

- I use and encourage my dyslexic students to use Mind Mapping, a simple and effective tool that can be used to help learners to visualise, connect, structure, classify thoughts and relations among them.
- The Total Physical Response (TPR) is a teaching method whereby the teacher takes on the role of the parent — giving prompts, setting patterns, playing games, and the student then responds physically to the prompt. The teacher then responds positively to the correct response, much in the way that a parent would. TPR is suggested as one the best teaching strategies. As a teacher, I am aware and employ this strategy in my EFL classroom with dyslexic learners.
- To directly increase the average reading efficiency of low-progress readers, I change the font's spacing settings
- Open question: Write down below other strategies and interventions you know or/and use to support dyslexic students.

Section 4: What do you think?

Instructions: According to Kormos and Nijakowska (2017, pp. 30, 37-38) specialized teacher training about using inclusive educational practices with dyslexic students can improve language teachers' self-confidence, self-efficacy and attitudes. Read the following question and rate how much you dis/agree with it.

I think that it is important to implement specialized teacher training about Dyslexia in order to lower teachers' concerns about supporting dyslexic students and increase their self-efficacy beliefs and foster a more positive attitude. (You can also write more ideas to support your belief).

Appendix 4: Email Sent to 240 Schools in Barcelona

Benvolgut/uda professor/a,

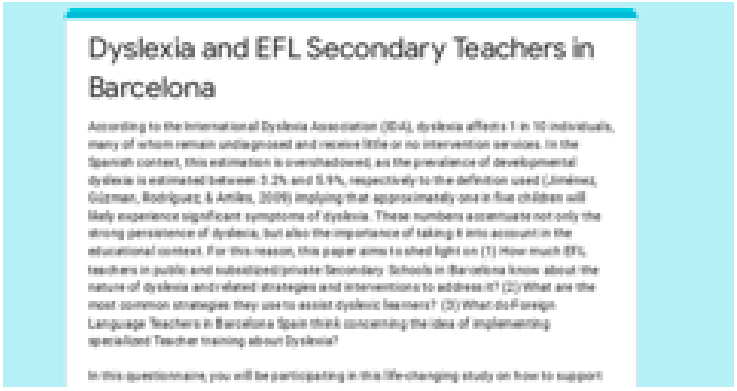
El meu nom és Jerihco Decano, soc estudiant del Màster de Formació delProfessorat de la Universitat de Barcelona.

Us faig arribar aquest missatge amb l'objectiu de demanar-vos la vostra participació en la recerca que estic fent sobre la dislèxia i el coneixement i intervencions del professorat d'anglès a l'ESO en Barcelona.

Per aquest motiu, us agrairia que féssiu arribar aquest correu, si fos possible, al personal docent d'anglès del vostre centre.

Moltes gràcies per la vostra col·laboració i disculpeu qualsevol molèstia.

Qüestionari:
https://docs.google.com/forms/d/e/1FAIpQLSf2qnQ-pHaRBY-1_NirWlxYTuHJTIopCfgXhg9C7q-3FDR1vg/viewform?usp=sf_link


Dyslexia and EFL Secondary Teachers in Barcelona

According to the International Dyslexia Association (IDA), dyslexia affects 1 in 10 individuals, many of whom remain undiagnosed and receive little or no intervention services. In the Spanish context, this estimation is overshadowed, as the prevalence of developmental dyslexia is estimated between 3.2% and 5.9%, respectively to the definition used (Jiménez, Guzmán, Rodríguez, & Artiles, 2009) implying that approximately one in five children will likely experience significant symptoms of dyslexia. These numbers accentuate not only the strong persistence of dyslexia, but also the importance of taking it into account in the educational context. For this reason, this paper aims to shed light on (1) How much EFL teachers in public and subsidized/private Secondary Schools in Barcelona know about the nature of dyslexia and related strategies and interventions to address it? (2) What are the most common strategies they use to assist dyslexic learners? (3) What do Foreign Language Teachers in Barcelona Spain think concerning the idea of implementing specialized Teacher training about Dyslexia?

In this questionnaire, you will be participating in this life-changing study on how to support

Appendix 5: The Questionnaire's Results

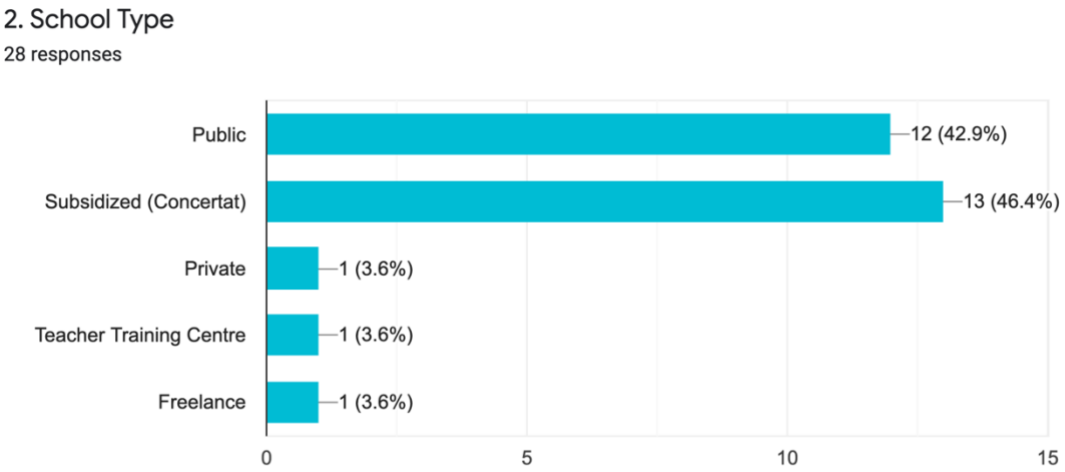


Image 1

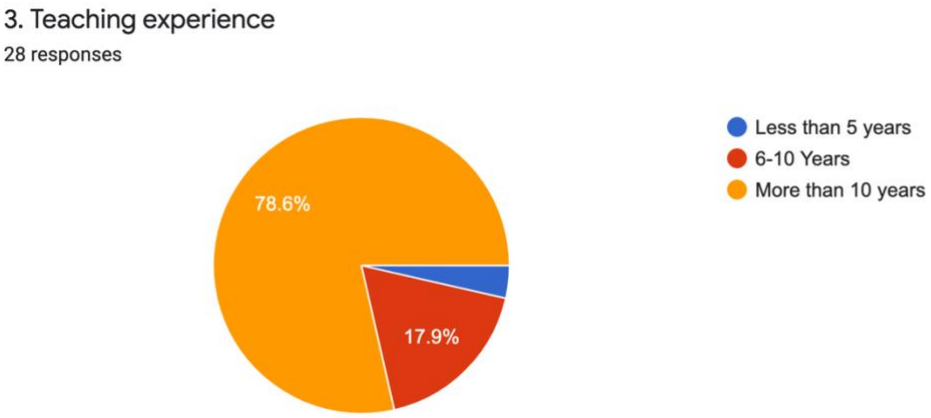


Image 2

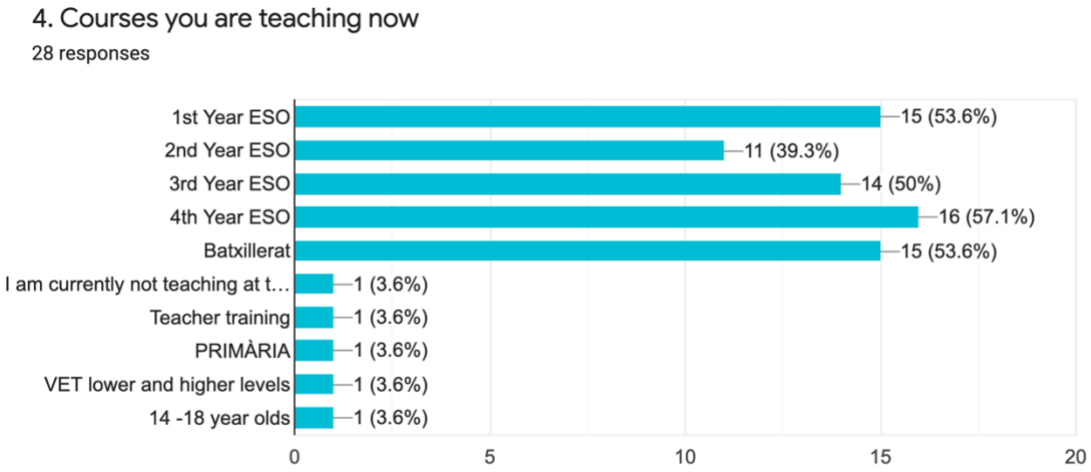


Image 3

Image 4

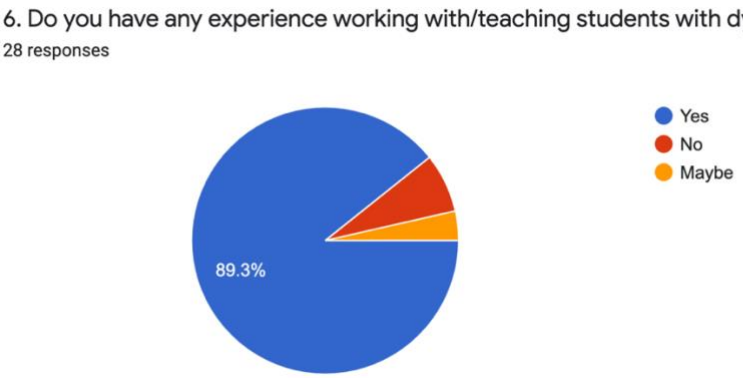


Image 5

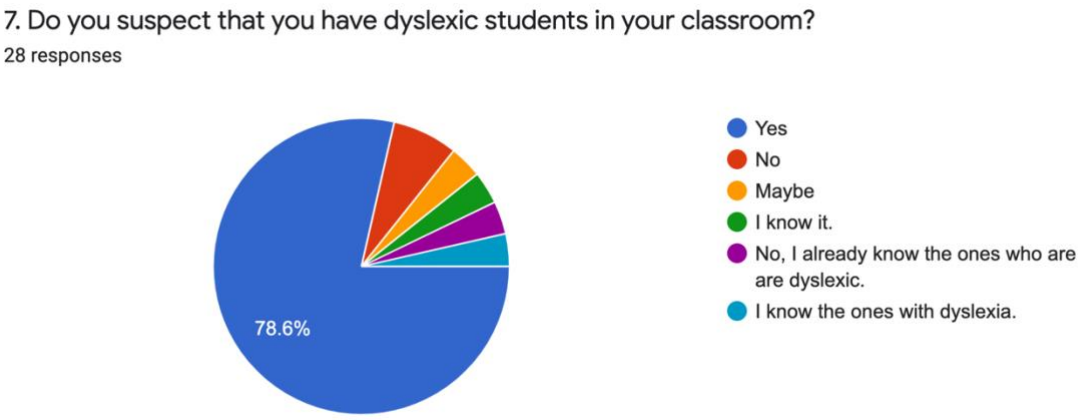


Image 6

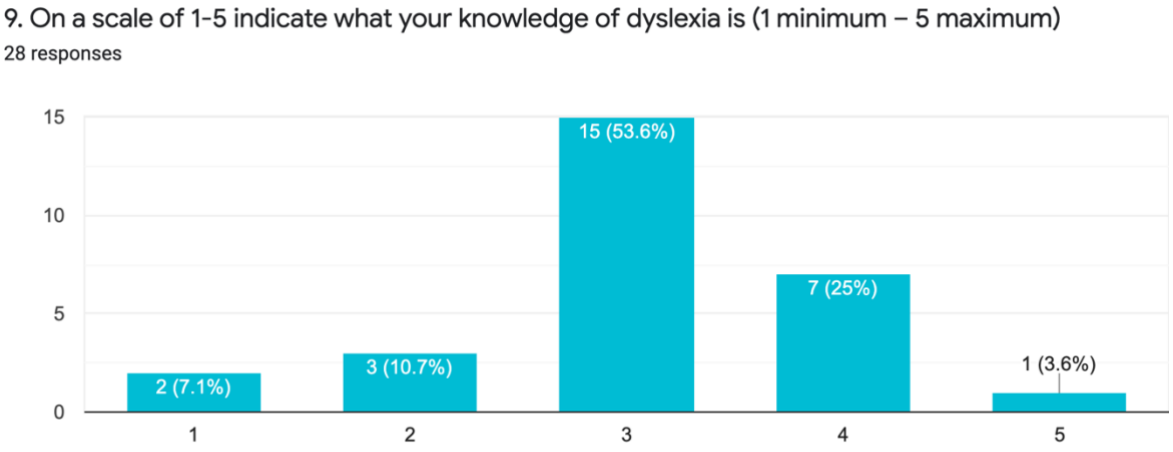


Image 7

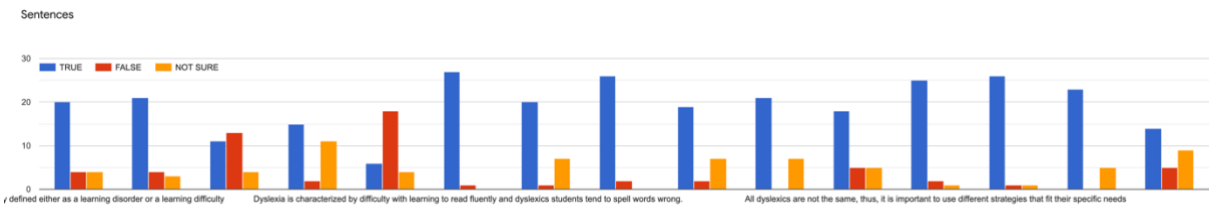


Image 8.

Dyslexic students need more time for certain activities and thus good organization might save their time. To support them, I

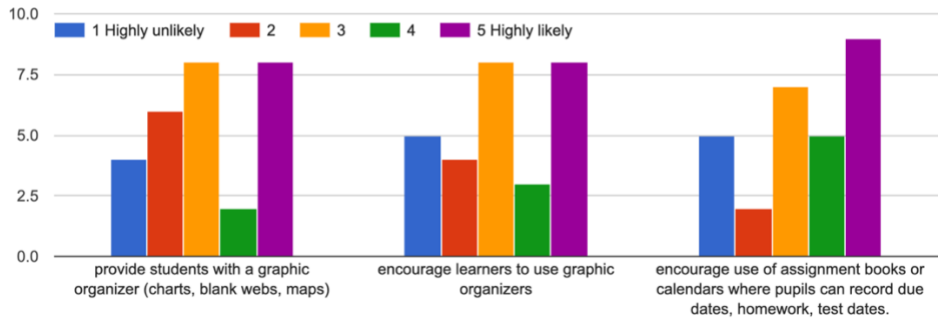


Image 9

Dyslexic learners normally have problems with written tasks. To support them, as a teacher, I

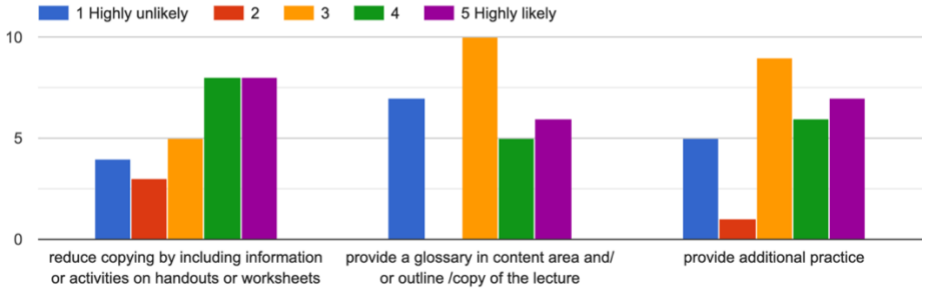


Image 10

I use dyslexia-friendly fonts (Comic- Sans, Century, Sylexiad, Dyslexie, Read Regular, OpenDyslexic).

28 responses

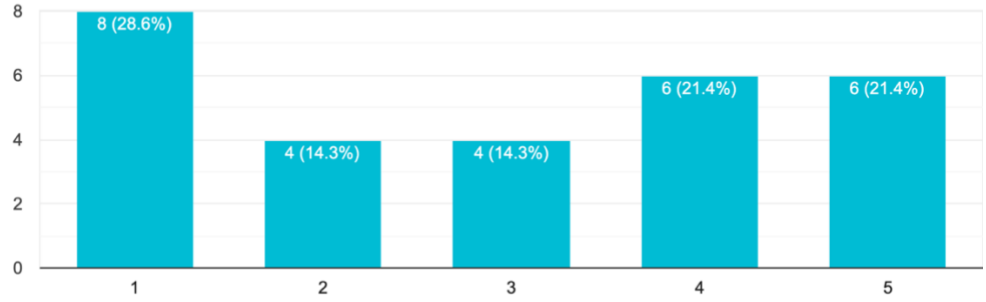


Image 11

I use flexible work times as dyslexic learners sometimes need more time to complete assignments.
28 responses

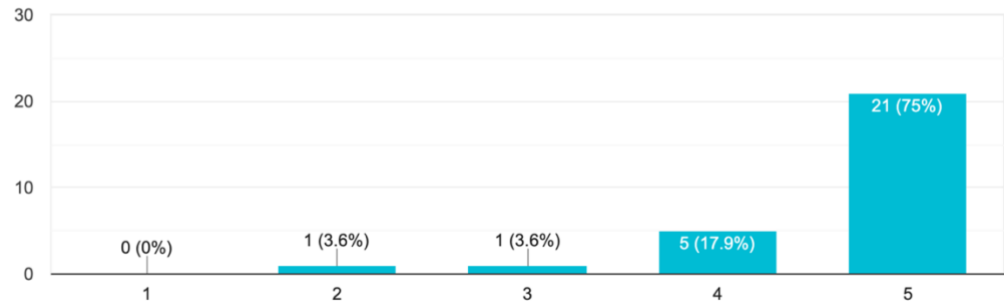


Image 12

I encourage my dyslexic students to use metalinguistic strategies (e.g., to find out why certain expressions are used the way they are) to allow t...o compensate for auditory and or visual weakness.
28 responses

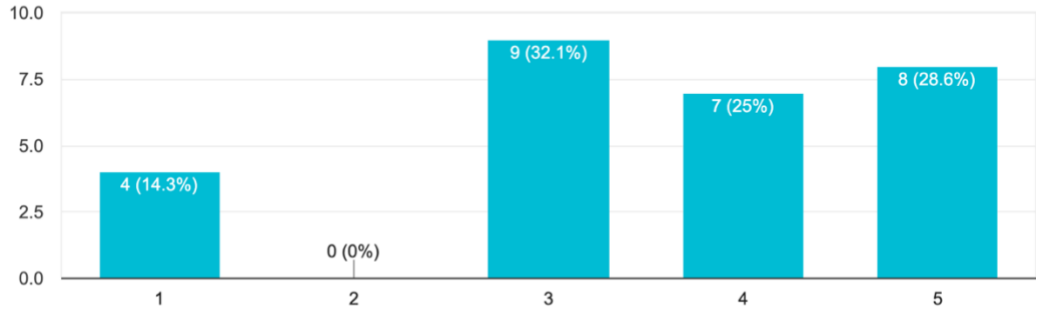


Image 13

I employ the Multi-Sensory Approach, as activating and involving more sense may compensate dyslexic learners visual deficits.
28 responses

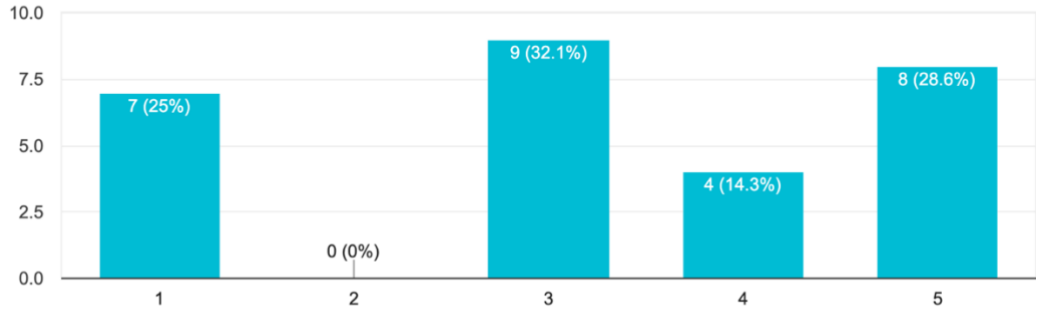


Image 14

I use and encourage my dyslexic students to use Mind Mapping, a simple and effective tool that can be used to help learners to visualise, connect...cture, classify thoughts and relations among them.
28 responses

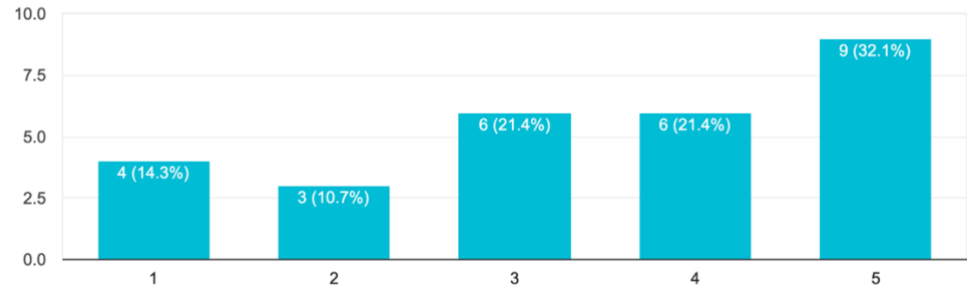


Image 15

The Total Physical Response (TPR) is teaching method whereby the teacher takes on the role of the parent — giving prompts, setting patterns, playing ...rategy in my EFL classroom with dyslexic learners.
28 responses

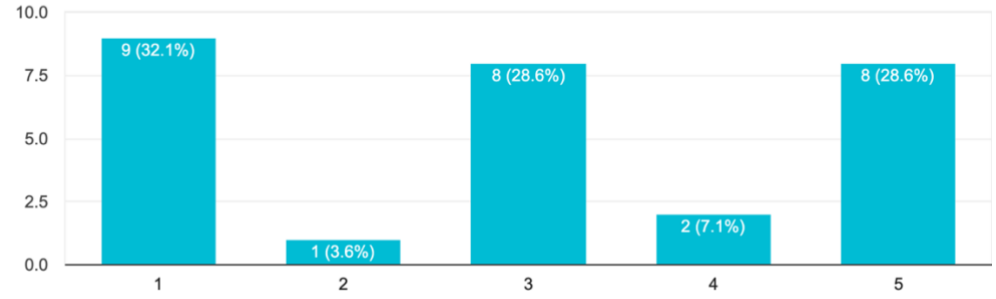


Image 16

I use speech-to-text software (e.g., Voki), as it saves dyslexic students' time and stress. In this software, students dictate the text, and the soft...e even games to improve vocabulary and thesaurus.
28 responses

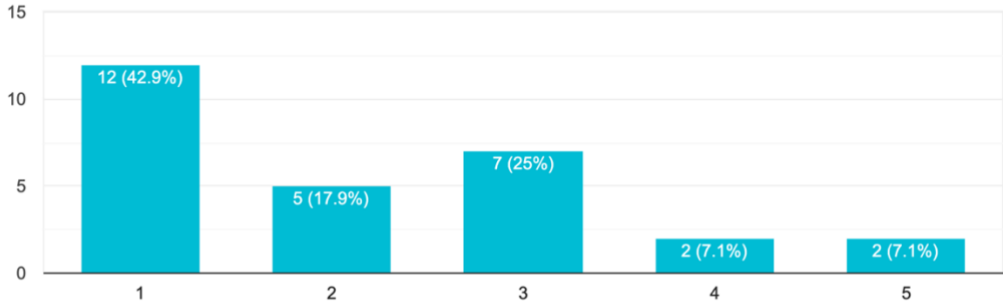


Image 17

To directly increase the average reading efficiency of low-progress readers, I change the font's spacing settings

28 responses

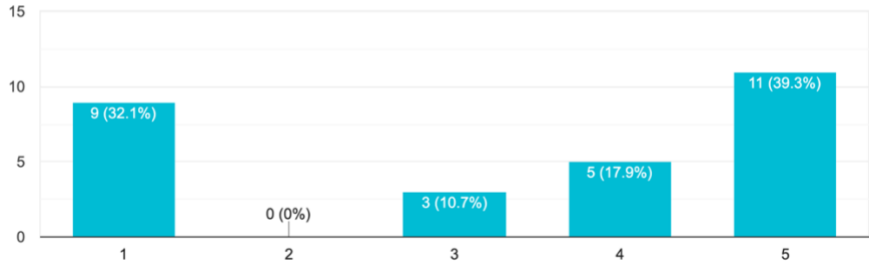


Image 18

Write down below other strategies and interventions you know or/and use to support dyslexic students.

6 responses

I ask for advice our psycologist

Encourage them with listening and speaking skills.

1. Before doing an exam, I always read aloud all the activities the students must do.
2. When the student hands in the exam once they have finished it, I always check that they have completed and understood every activity.
3. We mark differently the spelling skill.

Every strategy that I use is already described above

Emphasize in bold important words

Spoken rather than written intervention

Image 19

I think that it is important to implement specialized teacher training about Dyslexia in order to lower teachers' concerns about supporting dyslexic...can also write more ideas to support your belief)

28 responses

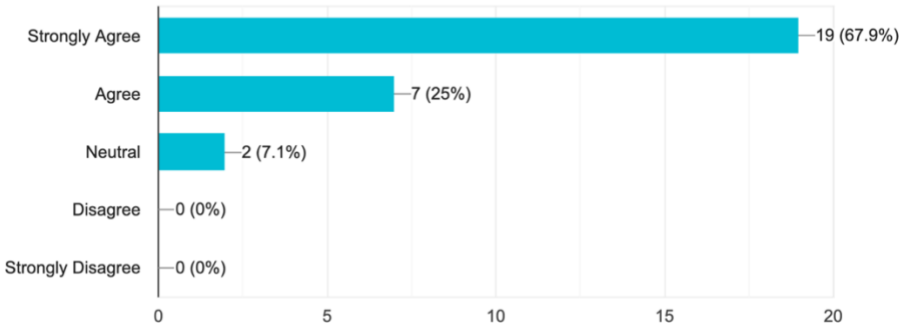


Image 20