

**THE REPUBLIC OF TÜRKİYE
SAKARYA UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES EDUCATION
ENGLISH LANGUAGE EDUCATION PROGRAM**

**DYSLEXIA IN ENGLISH LANGUAGE EDUCATION: A STUDY ON PRIMARY
SCHOOL EFL TEACHERS' AWARENESS**

A MASTER'S THESIS

LALE GÖKÇE GENÇ

**SUPERVISOR
ASSOC. PROF. DR. CİHAT ATAR**

AUGUST 2024

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DECLARATION OF ETHICS

In this study that I prepared following the Sakarya University Institute of Educational Sciences Thesis-Project Writing Guide, I declare:

- I have obtained and presented all the information and documents included in the thesis within the framework of academic and ethical rules,
- I refer to the works I have used and cite them as a source,
- I have not made any changes in the data used,
- I do not present the whole or any part of this thesis as another thesis study.

Lale Gökçe GENÇ

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First and foremost, I would like to express my deepest gratitude and appreciation to my esteemed supervisor Assoc. Prof. Dr. Cihat Atar for his invaluable support and encouragement throughout my whole Master's journey. He has enlightened and inspired me in the matter of what being a researcher is and how to be a successful one by serving as a true model. Therefore, feeling beyond lucky to cross paths with such a great person, I am thankful for every effort he has put for me in the middle of his intense work schedules since the first day. I would also like to thank my colleagues and friends for being there with me with their eternal support and advice whenever I needed them. I feel lucky to have crossed paths with such selfless souls in this life. Finally, my family, the reason of my existence and happiness, I am forever thankful for sharing a life with you. Whatever I have succeeded so far and will hopefully succeed in the future, they are all thanks to you. I hope I can continue making you proud on the days waiting for us. I love you.

ÖZET

İNGİLİZCE EĞİTİMİNDE DİSLEKSİ: İLKOKUL İNGİLİZCE ÖĞRETMENLERİNİN DİSLEKSİ FARKINDALIĞI ÜZERİNE BİR ÇALIŞMA

Lale Gökçe GENÇ, Yüksek Lisans Tezi

Danışman: Doç. Dr. Cihat ATAR

Sakarya Üniversitesi, 2024.

Disleksi, bilgi işleme ve kod çözme arasındaki yanlış iletişim nedeniyle okuma yeteneğini etkileyen spesifik bir öğrenme farklılığıdır. Bu farklılığın dünyanın yüzde 10'luk kesiminde daha baskın olduğu tahmin edilmektedir ve bu da her sınıfta en az bir dislektik öğrenciyle karşılaşma olasılığının yüksek olduğu anlamına gelmektedir. Yabancı dil sınıfları bağlamında, ana dil gelişimlerinde zaten gerideyken yabancı bir dilde bilgiyi işlemek ve kodunu çözmek dislektik öğrenciler için kafa karıştırıcı olabilmektedir. Bu durumda, yabancı dil öğretmenleri, disleksinin ve dislektik öğrencilerinin varlığının farkında olmadan onları yanlış yorumlayabilir; onlara kötü davranabilmekte ve öğrencilerin hedef dil öğrenme süreci üzerinde olumsuz etki bırakabilmektedir.

Bu tür öğrencilerin İngilizce gelişimlerinde mümkün olduğunca önceden minimum düzeyde başarısızlık ve destekten yoksun kalma riskine sahip olmalarını sağlamak amacıyla, bu çalışma Türkiye'deki ilkökul İngilizce öğretmenlerinin disleksi konusunda ne kadar bilinçli olduklarını ölçmektedir. Bağlamı itibarıyla ilgili literatürdeki boşluğu kapatmak için katkıda bulunmayı hedefleyen bu çalışma, yakın gelecekte disleksik yabancı dil öğrencilerine sağlanacak fırsatların sayısını en üst düzeye çıkarmak için Türk eğitim sisteminde neler yapılması gerektiğine dair öneriler sunmaktadır.

Bu nihai amacın ışığında, bu çalışma, bilgi eksikliği yaşadıkları noktaları tespit etmek ve bu durumun nedenlerini ortaya çıkarmak için İngilizce öğretmenlerinin disleksi hakkındaki bilgileri ve kaynaştırma sınıflarında dislektik öğrencilerine nasıl eğitim verileceği üzerine derinlemesine bir araştırma yapmaktadır. Açıklayıcı bir karma yöntem tasarımına sahip olan bu çalışma, Soriano-Ferrer ve Echegaray-Bengoa (2014) tarafından geliştirilen 36 maddelik üçlü Likert ölçek ve araştırmacı tarafından geliştirilen yedi sorudan oluşan yapılandırılmış görüşme olmak üzere iki veri aracını içermektedir.

Buna göre, Marmara Bölgesi'ndeki Balıkesir, Bursa, İstanbul, Kocaeli ve Sakarya illeri olmak üzere beş ilden 288 ilkokul İngilizce öğretmeninin katılımıyla veriler çevrimiçi olarak toplanmıştır. Toplanan nicel veriler betimsel analiz ile analiz edilirken, nitel veriler için tümevarımsal içerik analizi kullanılmıştır.

Çalışmanın bulgularına bakıldığında, Türkiye'deki ilkokul İngilizce öğretmenlerinin disleksinin gerçekte ne olduğu konusunda çoğunlukla bilgisiz oldukları özetle ifade edilebilir. Katılımcıların, disleksi ile okuma becerileri arasındaki ilişkiye dair yalnızca temel bir anlayışa sahip oldukları görülmektedir. Bununla birlikte, disleksinin yaygınlığı, fonolojik süreç üzerindeki etkisi, disleksinin bireylerin özgüveni üzerindeki etkileri, kalıtsal doğası, tedavi edilemezliği, dislektik öğrencilere İngilizceyi yabancı dil olarak öğretme yöntemleri gibi spesifik ayrıntılar söz konusu olduğunda, farkındalık düzeyleri en alt kademeye düşmektedir. Bunun yanı sıra, katılımcılar, disleksiye yanlış bir şekilde harf ve kelimeleri tersten veya yansımali olarak algılanması ile ilişkilendirmektedir. Dolayısıyla bu çalışma; dislektik öğrencilerin hedef dil gelişimi sürecinde gerçekten görüldüğü, anlaşıldığı ve öğrenme ihtiyaçlarına yönelik destek sağlandığı bir geleceğe adım atmak için dislektik öğrencilere okuma ve yazma becerilerini öğretmeye yönelik İngilizce öğretmen adaylarını hazırlayan yükseköğretim içeriğinin sağlanması, hizmet içi İngilizce öğretmenleri için ilgili eğitim programları ve disleksi dostu ilkokul müfredatının İngilizce ek bireyselleştirilmiş eğitim programları ile uyarlanması gerektiğini işaret etmektedir.

Anahtar Kelimeler: Özgül Öğrenme Güçlüğü, Disleksi, Dislektik, Yabancı Dil Olarak İngilizce, Farkındalık.

ABSTRACT

DYSLEXIA IN ENGLISH LANGUAGE EDUCATION: A STUDY ON PRIMARY SCHOOL EFL TEACHERS' AWARENESS OF DYSLEXIA

Lale Gökçe GENÇ, Master Thesis

Supervisor: Assoc. Prof. Dr. Cihat ATAR

Sakarya University, 2024.

Dyslexia is a specific learning difference affecting reading ability due to a miscommunication between information processing and decoding. This difference is estimated to be predominant towards the 10% of the world, connoting a high possibility of encountering at least one dyslexic student in each classroom. In the context of foreign language classrooms, processing and decoding information in an additional language when they already are behind in their native language development might be confusing for dyslexic students. That being the case, without being aware of dyslexia and the presence of their dyslexic students, EFL teachers might misinterpret and mistreat them and leave a negative impact on the students' target language learning progress.

With the aim of enabling such students to have the minimum risk of failure and being destitute of support in their EFL development as far in advance as possible, the present study measures how aware Turkish primary school EFL teachers are of dyslexia in Türkiye, which is a gap in the related literature in terms of its context, and suggests what should be done in the Turkish education system in order to maximize the number of opportunities to be provided for dyslexic EFL students in the near future.

In light of this ultimate aim, the present study makes an in-depth investigation of EFL teachers' knowledge of dyslexia and how to teach dyslexic EFL students in inclusive classrooms to identify the points where they lack knowledge and to reveal the reasons behind this situation. With a mixed-method design that is explanatory in nature, the present study included two data tools, which were a three-point scale with 36 items developed by Soriano-Ferrer and Echegaray-Bengoa (2014), namely, the Knowledge and Beliefs about Developmental Dyslexia Scale (See Appendix A), and a structured-interview with seven questions developed by the researcher (See Appendix B).

Accordingly, with the participation of 288 Turkish primary school EFL teachers from five cities in the Marmara Region of Türkiye, namely Balıkesir, Bursa, İstanbul, Kocaeli, and Sakarya, the data were collected online. Following this step, the quantitative data were analyzed through descriptive analysis, whereas what was conducted for the qualitative data was inductive content analysis.

Regarding the findings, it could be put in a nutshell that the Turkish primary school EFL teachers are mostly unaware of what dyslexia actually is. They only have a basic understanding of the connection between dyslexia and reading skills. However, when it comes to specific details such as the prevalence of dyslexia, its impact on phonological processing, the effects on self-confidence in individuals with dyslexia, its hereditary nature and incurability, or methods for teaching EFL to dyslexic students, and so on, their level of unawareness reaches a peak. Moreover, the participants wrongly associate dyslexia with the visual perception of reversed or mirrored letters and words. In spite of all those, what is promising is that the primary school EFL teachers are aware of their unawareness and would like to help their dyslexic students by maximizing their dyslexia awareness and improving their teaching skills. In order to take a step towards such a future when dyslexic students are actually seen, understood, and provided with support for their learning needs in the process of their target language development, the present study suggests that content preparing EFL teacher candidates for teaching reading and writing skills to students with dyslexia, related training programs for in-service EFL teachers, and the adjustment of dyslexia-friendly primary school curricula with additional individualized education programs on English should be provided.

Keywords: Specific Learning Difference, Dyslexia, Dyslexic, EFL, Awareness.

TABLE OF CONTENTS

DECLARATION OF ETHICS.....	i
ACKNOWLEDGEMENT	ii
ÖZET	iii
ABSTRACT	v
TABLE OF CONTENTS	vii
LIST OF TABLES	xi
LIST OF FIGURES	xii
LIST OF ABBREVIATIONS	xiii
CHAPTER I.....	1
1. INTRODUCTION.....	1
1.1.Problem Status	1
1.2.The Purpose and Significance of the Study	2
1.3.Problem Statement.....	4
1.4.Sub-problems	4
1.5.Assumptions.....	5
1.6.Limitations	5
1.7.Definitions	6
CHAPTER II	7
2. THE THEORETICAL FRAMEWORK OF THE RESEARCH AND RELATED LITERATURE	7
2.1.Specific Learning Differences (SpLDs)	7
2.2.Dyscalculia.....	10
2.3.Dysgraphia	11
2.4.Dyslexia	12
2.4.1.The Mind of the Dyslexic	17

2.4.2.Strengths of the Dyslexic	18
2.4.3.Types of Dyslexia	20
2.4.4.Common Misconceptions about Dyslexia	21
2.5.Dyslexia in Education.....	24
2.6.Teaching Methods and Techniques Used for Students with Dyslexia	25
2.6.1.Alpha to Omega	26
2.6.2.Orton-Gillingham.....	27
2.6.3.Hickey Multi-Sensory Language Course.....	27
2.6.4.Bangor Dyslexia Teaching System.....	28
2.6.5.Barton Reading and Writing System	28
2.6.6.New Herman Method.....	29
2.6.7.Natural Reading	29
2.6.8.Wilson Reading System.....	29
2.6.9.Lindamood-Bell Programs.....	30
2.7.Teachers' knowledge of dyslexia	30
2.8.Dyslexia in the Turkish education system	42
2.9.Dyslexia in EFL (English as a Foreign Language) Education.....	45
2.10.EFL Teaching Policies in the Turkish Education System	47
2.11.Dyslexia in the English Language Teacher Education in Türkiye	54
2.12.EFL Teachers' Knowledge of Dyslexia.....	56
2.12.1.Turkish EFL Teachers' Knowledge of Dyslexia	60
CHAPTER III.....	61
3. METHODOLOGY	61
3.1.Research Design	62
3.2.The Sample and Setting	64
3.3.Data Collection Tools and Procedures.....	68

3.4.Data Analysis	70
CHAPTER IV	73
4. RESEARCH FINDINGS	73
4.1.Findings Based upon the Scale	73
4.2.Findings Based upon the Interview Questions	85
4.2.1.Interview Question 1: What is dyslexia?	86
4.2.2.Interview Question 2: How do you detect that there is a dyslexic student in your class?.....	87
4.2.3.Interview Question 3: Have you ever had a dyslexic student? If yes, have you encountered any difficulties in the process of teaching English to your student?	88
4.2.4.Interview Question 4: What teaching methods do/would you apply to your dyslexic student?.....	89
4.2.5.Interview Question 5: Did you take a course on dyslexia during your Bachelor's Degree program?.....	90
4.2.6.Interview Question 6: Have you ever been provided any in-service training on dyslexia throughout your teaching career?.....	91
4.2.7.Interview Question 7.1: What kind of policies should be followed in the education system in order to facilitate foreign language education for both EFL teachers and dyslexic students?.....	92
4.2.8.Interview Question 7.2: What kind of support should the school administration provide in order to facilitate foreign language education for both EFL teachers and dyslexic students?.....	94
CHAPTER V	96
5. DISCUSSION, CONCLUSION AND SUGGESTIONS.....	96
5.1.Discussion of the Findings.....	96
5.1.1.Discussion on Research Question 1: To what extent are Turkish primary school EFL teachers aware of dyslexia?	96
5.1.1.1.Discussion on Research Question 1.1: To what extent do Turkish primary school EFL teachers know dyslexia?.....	97

5.1.1.2.Discussion on Research Question 1.2: To what extent do Turkish primary school EFL teachers lack knowledge of dyslexia?	98
5.1.1.3.Discussion on Research Question 1.3: To what extent do Turkish primary school EFL teachers have misconceptions about dyslexia?	101
5.1.2.Discussion on Research Question 2.1: According to the views of Turkish primary school EFL teachers, are they provided any in-service training on dyslexia?	102
5.1.3.Discussion on Research Question 2.2: What kind of policies should be followed in the Turkish education system in order to facilitate foreign language education for both teachers and dyslexic students?.....	103
5.1.4.Discussion on Research Question 2.3: What kind of support should school administrations provide in order to facilitate foreign language education for both teachers and dyslexic students?	106
5.2.Conclusion	111
5.3.Limitations and Suggestions for Further Research.....	113
REFERENCES	115
APPENDICES	136
CURRICULUM VITAE	138

LIST OF TABLES

Table 1. The Primary School English Textbooks.....	52
Table 2. The Methodology	61
Table 3. The Demographics of the Total Number of Participants.....	65
Table 4. The Demographics of the Interviewees	66
Table 5. Descriptive results of the KBDDS based upon the Subscales.....	73
Table 6. Subscale 1: General Information	74
Table 7. Subscale 2: Symptoms/Diagnosis.....	79
Table 8. Subscale 3: Treatment	82
Table 9. Interview Question 1: What is dyslexia?.....	86
Table 10. Interview Question 2: How do you detect that there is a dyslexic student in your class?	87
Table 11. Interview Question 3: Have you ever had a dyslexic student? If yes, have you encountered any difficulties in the process of teaching English to your student?.....	88
Table 12. Interview Question 4: What teaching methods do/would you apply to your dyslexic student?	89
Table 13. Interview Question 5: Did you take a course on dyslexia during your Bachelor's Degree program?	90
Table 14. Interview Question 6: Have you ever been provided with any in-service training on dyslexia throughout your teaching career?	91
Table 15. Interview Question 7.1: What kind of policies should be followed in the education system in order to facilitate foreign language education for both EFL teachers and dyslexic students?	92
Table 16. Interview Question 7.2: What kind of support should the school administration provide in order to facilitate foreign language education for both EFL teachers and dyslexic students?	94

LIST OF FIGURES

Figure 1. Types of Specific Learning Differences (SpLDs).....	8
Figure 2. A sample writing of the dyslexic (Eide and Eide, 2023, p. 165)	15
Figure 3. The Paradox of Dyslexia (Shaywitz, 2003, p. 70)	16
Figure 4. Going from Text to Meaning (Shaywitz, 2003, p. 72).....	16
Figure 5. The Alternative Reading Process of the Dyslexic Brain (Shaywitz, 2003, p. 105).....	17
Figure 6. Advantages of Dyslexia (Eriş, 2021)	19



LIST OF ABBREVIATIONS

DD	Developmental Dyslexia
EFL	English as a Foreign Language
GRC	Guidance and Research Centre
IC	Inclusive Classroom
IDA	International Dyslexia Association
IE	Inclusive Education
IEP	Individualized Education Program
MoNE	Ministry of National Education
SE	Special Education
SEN	Special Educational Needs
SpLD	Specific Learning Difference

CHAPTER I

1. INTRODUCTION

1.1. Problem status

Reading is one of the skills that becomes vital for one starting from the school life. In today's world, where access to information has become of utmost importance to survive, whether in the context of daily life, work, or academic life, the lack of reading skills is likely to have a lifelong effect on people in a negative sense. In the context of school, reading could be considered as one of the building blocks of success in courses taken. Students who have reading problems based on the reading levels expected from them were discussed by Pollatsek and Rayner (1989, as cited in Jones et al., 2013) in three different areas:

1. Poor Readers: Readers who are at a normal IQ level and are one or two years behind the expected reading level.
2. Dyslexic Readers: Readers who are at a normal IQ level and are at least two or more years behind the expected reading level.
3. Lagging Readers: Readers with an IQ level of 80 or lower and who are behind the expected reading level.

In the case of having continual difficulty in reading in the first years of learning, students might have a high chance of failing at the following stages of their academic life (Zhou, 2023). On top of that, the ongoing effect of the unaccomplished process of learning to read shows itself in different areas of life at the following ages. Accordingly, Tops et al. (2012) argue that dyslexic students tend to stop continuing their academic life following secondary school. What is more, based upon Shelley-Tremblay et al.'s (2007) report, dyslexia was found to be more common among juvenile delinquents when the rate is compared to the world population. Being acknowledged as a specific learning difference that affects the reading ability due to a miscommunication between information processing and decoding (Shaywitz, 2003), dyslexia is estimated to be as predominant as around 10% globally, which could be interpreted that there is a high possibility of

encountering at least one dyslexic student in each classroom (Erkan et al., 2012; Krzyzak, 2006; Nijakowska, 2014; Stein, 2001). For that reason, teachers should be aware of what dyslexia is and how their dyslexic students learn the best as well as adjust their teaching strategies accordingly in order to be one step closer to equal education for all students (Ganschow et al., 1998; Indrarathne, 2010; Kormos et al., 2009; Lama, 2019; Lemperou et al., 2011; Nyikes, 2019; Ranaldi, 2003; Rontou, 2012).

1.2. The purpose and significance of the study

Sharing similar lives with approximately 10% of individuals all around the world (Erkan et al., 2012; Krzyzak, 2006; Nijakowska, 2014; Stein, 2001), which adds up to the existence of at least one dyslexic student in every classroom, dyslexia causes those experiencing it to have difficulties in decoding and processing the phonological aspects of the language and establish a strong connection between these aspects and their written forms (Snowling, 2006). As it is during primary school that the foundational skills related to reading and language development are assessed and difficulties are most commonly identified, this period is often considered a critical educational stage for the diagnosis of dyslexia (Eide and Eide, 2023). When this can be the case even for the construction of their native language (Erkan et al., 2012), it seems possible to consider difficulties faced by dyslexics in their foreign language learning process, as well. In a way that proves this assumption, there have been quite a variety of findings in the literature regarding difficulties frequently encountered by dyslexic students in language classrooms (e.g., Crombie, 2000; Ganschow and Sparks, 2000; Kormos et al., 2009; Kryzak, 2007; Lama, 2019; Lemperou et al., 2011; Nijakowska, 2010). According to the literature (e.g., Ganschow et al., 1998; Indrarathne, 2019; Lemperou et al., 2011; Nyikes, 2019; Ranaldi, 2003; Rontou, 2012), EFL teachers play a major role in giving assistance to them in the process of solving these difficulties. Thus, being aware of dyslexia and knowing how to treat dyslexic students based on the ways they need to be differentiated from their peers in inclusive EFL classrooms have been of responsibilities and requirements of EFL teachers (Arapogianni, 2003; Constantopoulou, 2003; Fekih, 2019; Hornstra et al., 2010; Indrarathne, 2019; Lama, 2019; Nijakowska et al., 2018; Tobbi, 2020).

Literature indicates that there still are a significant number of dyslexic EFL students all around the world who need differentiation but are offered insufficient help by their EFL teachers due to their lack of knowledge about dyslexia and how to provide dyslexic students and their peers with opportunities to learn EFL under equal circumstances (e.g., Nijakowska et al., 2018; Lama, 2019). In Türkiye, there have been studies conducted to investigate the awareness of Turkish EFL teachers (e.g., Aktan, 2020; Balci, 2019; Basar and Goncu, 2018; Tosun et al., 2021) and pre-service EFL teachers (e.g., Atar and Amir, 2023) regarding dyslexia. However, a mixed-method study focusing both on the dyslexia awareness of EFL teachers and their self-reported suggestions to facilitate EFL learning and teaching for both dyslexic students and the teachers under the most equal circumstances possible has not been encountered in the context of Türkiye yet. For this reason, the current study aims to provide new insights into the field about how aware Turkish primary school EFL teachers are of dyslexia and how to teach dyslexic EFL students in inclusive classrooms, identify the points where they lack knowledge and misconceive, and reveal the reasons behind this situation. In the light of these objectives, the present study aims to seek the answers to the following questions:

1. To what extent are Turkish primary school EFL teachers aware of dyslexia?
 - 1.1. To what extent do Turkish primary school EFL teachers know dyslexia?
 - 1.2. To what extent do Turkish primary school EFL teachers lack knowledge of dyslexia?
 - 1.3. To what extent do Turkish primary school EFL teachers have misconceptions about dyslexia?
2. According to the views of Turkish primary school EFL teachers:
 - 2.1. Are they provided with any in-service training on dyslexia?
 - 2.2. What kind of policies should be followed in the Turkish education system to facilitate EFL education for both teachers and dyslexic students?
 - 2.3. What kind of support should school administrations provide to facilitate EFL education for both teachers and dyslexic students?

1.3. Problem statement

Literature indicates that there still are a significant number of dyslexic EFL students all around the world who are offered insufficient support by their EFL teachers due to their lack of knowledge about dyslexia and the efficacy of meeting EFL learning needs of dyslexic students to enable them to learn their target language under equal circumstances with their peers (e.g., Nijakowska et al., 2018; Lama, 2019). Drawing attention to the related problem, International Dyslexia Association (IDA, 2012) compares the possible effects of the two scenarios regarding teachers' knowledge of dyslexia on dyslexic students. Accordingly, providing effective phonological training to dyslexic children during kindergarten and first grade could greatly reduce difficulties in achieving grade-level reading proficiency compared to those who are not identified or assisted until third grade. Among those who struggle with reading in third grade, 74% continue to face challenges in reading by the 9th grade, often persisting into adulthood. As it could be inferred from the related statement of IDA (2012), EFL teachers are at the heart of the future ahead of dyslexic students in their EFL learning journey. Even while learning how to read in their native language is already difficult for dyslexics and implementing inefficient teaching methods leaves negative traces on them in the long run, making an effort to learn their target language from an EFL teacher with a lack of dyslexia awareness is likely to result in a far place from success for the dyslexic students regardless of their actual potential. Such a case might also cause EFL teachers to question their self-efficacy since they would not know what their dyslexic students need and come up with suitable teaching strategies for them (e.g., Atar and Amir, 2023).

1.4. Sub-problems

The role of dyslexia in EFL teacher education is seen to have been built on sand as it only has a narrow focus on a conceptual basis in descriptive courses such as Special Education provided in pre-service teacher training (Atar et al., 2021). On top of that, the situation does not seem promising in in-service teacher training, either, as there has been limited to no attempt to raise awareness of the related symptoms (Tosun et al., 2021). Hence, this lack of training could result not only in EFL teachers' lack of dyslexia knowledge but also in misconceptions about this syndrome. That being the case, the

teachers could easily assume that their dyslexic students are lazy or have an intelligence-related issue, causing the students to lose their self-confidence and interest in learning their target language. Apart from that, although individualized education programs provided by the Ministry of National Education (MoNE) for students with special educational needs include subjects such as Turkish and Mathematics, English does not take part in them, which adds up to that the dyslexic EFL students in Türkiye are not supported by the government other than when they are taught in inclusive classrooms although it is just as crucial as the two subjects. Being left alone, dyslexic EFL students might keep falling more and more behind their peers and end up with failure without having the chance to show their actual potential.

1.5. Assumptions

With the findings of this current research, it is assumed that it could contribute to the gap in the literature in the context of Türkiye by means of its new insights about the level of Turkish EFL teachers' dyslexia awareness and possible reasons behind the points they lack knowledge of and have misconceptions about. In addition, it is also believed that the pedagogical aspects of the current research, with the suggestions of the participants towards the Turkish education system and school administrators, could be of help to educational policymakers in the case of facilitating EFL education for both teachers and dyslexic students.

1.6. Limitations

The current study encountered several limitations related to its sample, setting, data collection tools, and methods. Specifically, focusing solely on Turkish primary school EFL teachers from five cities in the Marmara Region may not have adequately represented the diverse teaching contexts throughout Türkiye, which could affect the generalizability of the findings to other regions or the nation as a whole. Additionally, the study relied on a single three-point scale (Echegaray-Bengoa, 2014, See Appendix A), and a structured interview (See Appendix B), which may have limited the depth and variety of responses. The restricted options of the scale and the structured format of the

interview might have narrowed the scope of information obtained compared to more open-ended methods. Furthermore, the use of online data collection could have excluded participants who are less proficient with digital tools or have limited internet access, potentially introducing selection bias.

1.7. Definitions

Throughout this thesis, there are certain terms being used in a frequent manner. These terms are defined in the following lines.

Dyslexia: Being known as a neurodevelopmental syndrome that affects one's ability to process information easily, dyslexia is a specific learning difficulty showing itself in the actions of reading, spelling, and writing (International Dyslexia Association, 2002).

Dyslexic: A person having dyslexia is identified as dyslexic (Rose, 2009).

EFL: Being abbreviated as EFL, English as a foreign language refers to the acknowledgment of English in norm-dependent countries (Kachru, 1985), where it is not spoken as a first or second language but learned as an international communication tool in formal educational settings (Gebhard, 2006).

Specific Learning Differences (SpLDs): Serving as an umbrella term (Snowling et al., 2020), specific learning differences (SpLDs) could be defined as a group of neurobiological syndromes causing individuals to face obstacles while processing language-based or mathematical features and using them in spoken or written forms (Muktamath et al., 2022).

CHAPTER II

2. THE THEORETICAL FRAMEWORK OF THE RESEARCH AND RELATED LITERATURE

2.1. Specific learning differences (SpLDs)

Just like snowflakes and fingerprints, human beings also differ from one another with their idiosyncratic characteristics. Some might be distinctive with the way they talk, some with the way they smile, and some with the way they learn. Specific learning differences (SpLDs), also acknowledged in different wordings such as specific learning disabilities, specific learning disorders, specific learning difficulties, and specific learning deficits, which in a way all represent one's attitude towards them based upon the choice to label the term according to Nijakowska (2016), could be defined as a group of neurobiological syndromes causing individuals to face obstacles while processing language-based or mathematical features and using them in spoken or written forms (Muktamath et al., 2022). Serving as an umbrella term (Snowling et al., 2020), specific learning differences (SpLDs) encapsulate three major symptoms, in which individuals are less successful at being able to read (i.e., dyslexia), write (i.e., dysgraphia), and do mathematics (i.e., dyscalculia). Among the SpLDs, one or more types of which could be seen in individuals at the same time, the majority belongs to dyslexia with its 80% estimated rate of prevalence (Pan, 2023).

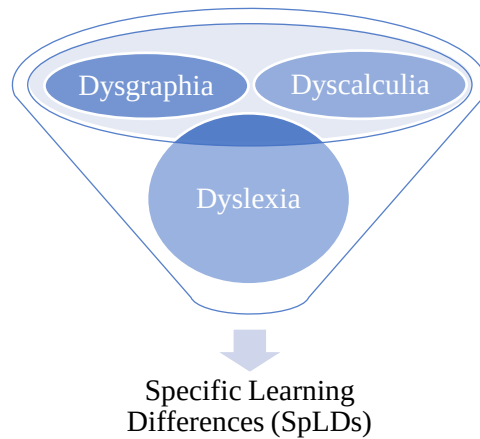


Figure 1. Types of specific learning differences (SpLDs)

The first studies on SpLDs in the world were conducted through the end of the 19th century (Pekel, 2010). However, it was not until the late twentieth century that the field of education broadened its research areas with SpLDs. Before that, the field of medicine laid the foundations through case studies focusing on observations for individuals experiencing difficulties while reading and writing (Bender, 2007). Including a secondary school student in his study in 1896, Morgan (1896, as cited in Zerbin-Rüdin et al., 1967) investigated the reason behind the abnormality in the participant's reading and writing although there was no developmental problem and identified the condition as “word blindness”. The scholar further explained that individuals with SpLDs were successful in certain areas but had difficulties in the ones requiring academic success.

In a study conducted by Orton et al. (1925, as cited in Lanchmann, 2002) on 14 children in 1925, it was determined that children who were thought to exhibit mental deficiency had normal or supernormal intelligence, and they identified those children with the term “reversed positioning sensation” (RPS). The scholar defined RPS as the situation of having difficulty in reading and writing despite a normal or above normal intelligence level and no physical disability. The turning point of SpLDs was when the term “learning disability” was first mentioned in a conference in Chicago by Kirk in 1963 (Robaey, 2013). The scholar defined SpLDs as difficulties in reading and understanding what is read, spelling and spelling errors, problems in mathematics skills, delays, deficiencies, or disorders in language and speaking skills (2013).

There are several common points shared by individuals with SpLDs, which could be listed as follows (Muktamath et al., 2022):

- Poor attention span,
- Illegible writing,
- Problems in motor coordination balance,
- Difficulty in perceiving the concept of direction,
- Difficulty in understanding the time,
- Difficulty in spelling and using punctuations,
- Difficulty in solving arithmetic operations,
- Difficulty in keeping the input in memory,
- Difficulty in understanding and applying the instructions given,
- Difficulty in transferring what is written on the board to the notebook,
- Time management issues (e.g., not being able to submit homework on time, etc.),
- Reverse perception of letters as mirror images (such as b/d, p/q),
- Skipping line, sequence, word, syllable, and sound while reading and writing,
- Making additions to words or removing suffixes from words, changing words (such as -term/ timer or train/tram) while reading or writing,
- Confusion regarding the order of the months, days of the week, etc.,
- Writing numbers backwards, reverse detection (such as 6/9, 25/52).

According to Rose (2009), individuals with SpLDs were the ones having difficulties in listening and speaking, reading and writing, reasoning, and mathematical skills; although they did not have a psychological or neurological diagnosis, a sensory defect, and were under equal educational opportunities with their peers. In the following years, it was defined in the book Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013) that SpLD referred to a neurodevelopmental condition preventing individuals from fully acquiring basic academic skills (i.e., reading words correctly and accurately, understanding what was read, using written expressions correctly, complying with spelling rules, arithmetic skills, mathematical reasoning skills, etc.). According to the book (2013), the criteria for diagnosis of SpLD was a six-month consistency in the detection of an individual's deficiency in at least one of the related skills despite any educational intervention programs they might take part in.

Apart from those, it was also estimated that males have a three times higher possibility of being diagnosed with one or more types of SpLDs compared to females (Shaywitz, 2003). Nevertheless, SpLDs are still not entirely identified with all their aspects,

especially in terms of their triggering factors in the brain, and are acknowledged to be caused by biological reasons. In light of such information, what could be implied here is that more research needs to be done to develop a better understanding of what such students actually need to get closer to success and come up with more effective teaching strategies for them. One of the first steps might be to tackle each type of SpLDs more in depth.

2.2. Dyscalculia

Dyscalculia, which is formed through the combination of two Ancient Greek words *dys* (i.e., difficulty with) and *calculia* (i.e., calculation), is a type of specific learning difference demonstrating its effects through being less successful in mathematical performances (e.g., solving addition-subtraction problems) compared to what is expected at their age and level of intelligence (Devine et al., 2013). Estimated to be prevalent among 6.5% of pupils around the world (Shalev and von Aster, 2008), dyscalculia is reported to have an influence on the lives of dyscalculic individuals especially in terms of financial and career-based aspects.

To scrutinize the characteristics of dyscalculia, the most common ones could be specified as follows (Khing, 2016):

- Difficulty in the relationship between concepts. (e.g., big-long, small-short),
- Sequencing problems,
- Incorrect calculations due to poor memory operation,
- Extremely slow and difficult solving of operations involving basic math skills,
- Inability to recognize the commutative property of addition and multiplication operations,
- Difficulty in demonstrating the steps and operations used in mathematical problems,
- Mistakes made due to carelessness,
- Problems related to visual and spatial functioning,
- Continuously using ten fingers in transactions,
- Difficulty comparing numbers, inability to distinguish negative and positive numbers,
- Difficulty in giving change while shopping,

- Difficulty understanding concepts (e.g., day, week, month, seasons etc.),
- Difficulty in telling time, finding place and direction,
- Lack of skills in strategic planning (e.g., playing chess),
- Inability to understand and remember general concepts in mathematics,
- Difficulty understanding fractions,
- Memory weakness in learning by numbers,
- Confusion of mathematical symbols,
- Difficulty understanding daily life problems and ordering information and events,
- Inability to draw and describe simple geometric shapes.

2.3. Dysgraphia

Dysgraphia, which is formed through the combination of two Ancient Greek words *dys* (i.e., difficulty with) and *graphia* (i.e., handwriting), is a type of specific learning difference resulting in an incoordination among the processing of written words, the movement of finger muscles that is necessary to be able to produce written words and the act of handwriting (Deiner, 2013; Chung et al., 2020). Although individuals with dysgraphia are less successful in the action of writing compared to the mainstream society, the symptom does not demonstrate its effect on other fine motor skills such as playing instruments (Dalaf and Talib, 2018).

Reported to be in tendency to have an IQ over 130 and superior cognitive skills in the shadow of complexities they face in daily activities (O'Hare, 1999), other common characteristics of individuals with dysgraphia could be specified as follows (Crouch and Jakubecy, 2007):

- Not being able to hold the pen in the proper position and having difficulty in controlling the pen,
- Complex and even illegible handwriting,
- Writing letters and numbers backwards,
- Confusing lowercase and uppercase letters,
- Write with letters of inappropriate size and spacing,
- Either omitting or adding some letters and syllables,
- Writing syllables or words backwards (e.g., tap-pat, mean-name),

- Not following the rules of spelling and punctuation,
- Not being able to keep up while looking at the board and writing down what the teacher says during classes,
- Difficulty in understanding and performing basic grammar and spelling skills,
- Confusing b-d, b-p, m-n, z-s, f-v, ğ, g and dotted letters,
- Perceiving and writing numbers as reversed or reversed (e.g., 3-E, 6-9, 12-21).

2.4. Dyslexia

Formed with the combination of two Ancient Greek roots *dys*, meaning “difficulty with,” and *lexis*, meaning “words”, the term *dyslexia* denotes “difficulty with words” (Schneider and Crombie, 2003, ix). However, going deeper into what it really stands for, the scope of the term goes much beyond that. Being a neurological condition that is hereditary in most cases (Erbeli et al., 2022), dyslexia is identified as a language-based learning difficulty that is directly related to phonological processing (Snowling, 2006). This condition makes it challenging for dyslexics to have a certain connection between what they hear/see/feel and how they decode in their brains and to match them with spoken or written language (International Dyslexia Association, 2002). In the case of experiencing disharmony during the process of matching, dyslexics find themselves in challenging situations where they cannot perform reading and spelling in a fluent way. Yet, this is only the tip of the iceberg when it comes to the effects of dyslexia on dyslexic individuals. It also causes confusion in discriminating between before/after and right/left, which results in mirror-writing in some cases (IDA, 2002), establishing relationships between concepts (Nijakowska, 2010), attention deficit and poor concentration (Lemperou et al., 2011), weak memory (Lama, 2019), and many more.

The IQ range of dyslexics is between normal and superior levels; therefore, it could be indicated that dyslexia does not reflect a negative effect on their intelligence (Siegel, 1993). Nevertheless, individuals having similar symptoms to dyslexia need to be subjected to intelligence tests so that whether they are dyslexic or not can be identified (Miles, 1983; Grant, 2010; Siegel, 1993). In the case of being identified as dyslexic, individuals who are usually at early school ages could be provided with special education services in both their schools and rehabilitation centres (Nugent, 2008).

Alongside the general education they receive in inclusive classrooms (IC), where students with and without special educational needs can learn together (Kirschner, 2015), dyslexics receive individualized education programs (IEP), which are written plans developed through the cooperation of school counsellors, and special and general education teachers with the contribution of the parents of dyslexics (Singleton, 2009). With this cooperation, the students' learning deficits, needs, and goals are identified, and appropriate teaching methods to fill the gaps between the dyslexics and their peers are decided on. These teaching methods are generally based upon the multisensory instruction approach, which is built upon the activation of learning through the use of two or more senses (i.e., visual, auditory, tactile/kinaesthetic) to enable dyslexics to process information in a harmonious way and activate their learning system (Kamala, 2014).

As a member of the SpLDs, dyslexia has been tackled and analyzed in literature with various foci for around two decades. Even in terms of its definition, what dyslexia really means has been discussed in various ways (Shaywitz, 2003). Miles (1995, as cited in Fekih, 2019) explains the situation by asserting that it is not likely to put the term dyslexia into one single formula and provide what it denotes in full.

One of the definitions was put forward by Critchley (1970) more than fifty years ago. According to the scholar, dyslexia is defined as “A disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence, and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin” (p. 11). However, this definition caused the scholar to be criticised for being discriminatory and his way of using terms such as “conventional instruction”, “adequate intelligence” and “socio-cultural opportunity” (Anastasiou 1998; Rontou, 2010; Thomson, 1990). In a similar tone, another definition of dyslexia was suggested by Porpodas (1988) as the state of struggling from “imperfection” in the abilities of processing the written and oral language, reading, and spelling, which has also been criticized for degrading individuals with dyslexia. The reason behind the criticisms was that neither of the scholars gave dyslexic individuals justice in terms of what is going on in their brain and how the fact that it works differently provides different opportunities for them (Eide and Eide, 2023).

To provide a well-detailed definition of dyslexia, the report of the Task Force on Dyslexia (2001), which is an organization formed by the Ministry of Education in

Ireland in order to provide professional help for dyslexic students' educational needs, explains that it is a type of learning difference affecting the process of acquiring basic skills such as reading, spelling, and also writing in some cases. The report also suggests that the symptoms of dyslexia are all associated with neurology, cognition, and behaviour. Accordingly, the most common characteristics of dyslexia could be listed as follows (Çolak and Yılmaz, 2023):

- Difference in input processing,
- Difficulty in distinguishing letters and numbers while reading, spelling, and for some, writing,
- Reading at a slower pace than what is expected from an individual of their age and level,
- In the case of reading aloud, pronouncing some words in an incomplete way or producing a completely different word instead,
- Difficulty in naming people or objects quickly,
- Difficulty in interpreting what is read,
- Forgetting what is easily learned at times,
- Difficulty in distinguishing left and right,
- Difficulty in describing addresses,
- Difficulty in telling the time,
- Difficulty in sequencing,
- Difficulty in using their motor skills in harmony (e.g., tying shoes),
- Difficulty in understanding instructions fully,
- Difficulty in learning a foreign language.

Considering the characteristics of dyslexia, not every dyslexic individual has to demonstrate all of these symptoms to be identified as one. As Eide and Eide (2023) suggested, writing could be demonstrated as an example of this situation as it is not a skill every dyslexic has difficulty with, but it is also one for some. In Figure 2, a sample writing of a dyslexic individual having the symptoms of writing difficulty could be seen.

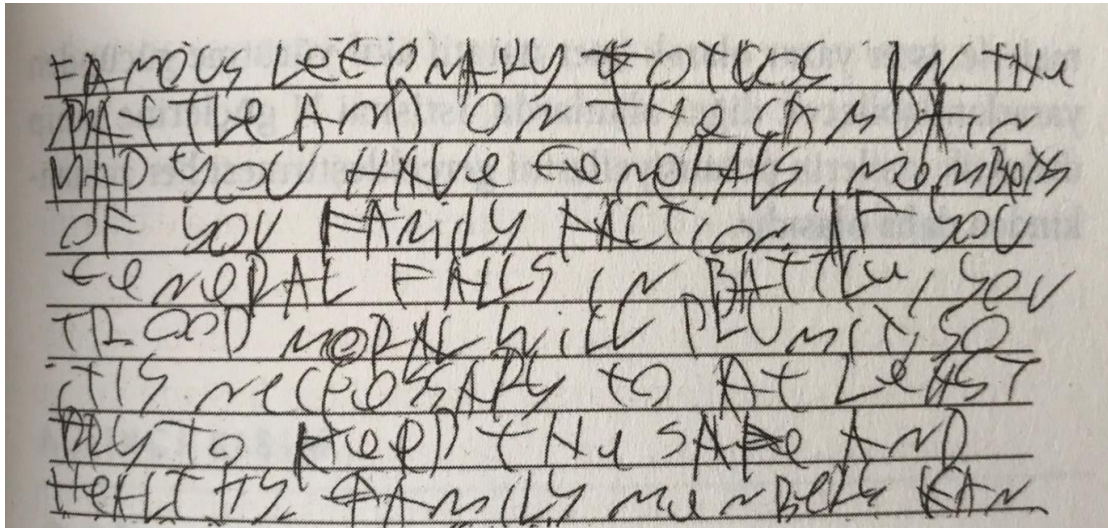


Figure 2. A sample writing of the dyslexic (Eide and Eide, 2023, p. 165)

While writing is a skill that is difficult to learn by some dyslexic individuals, reading is confusing for every single one of them. Becoming the most apparent when it comes to a stage when they fall behind, whereas every other peer could already read well, and the situation just keeps repeating itself for a long time; dyslexic individuals feel themselves stuck in a barrier named "decoding" ahead of them. As seen in Figure 3, reading is comprised of two stems, which are decoding and comprehension. Hence, considering reading skill as a tree, it does not come out in bloom and bear fruit if one of the vital stems are missing. Just like that, dyslexic individuals who are not able to identify written words cannot reach the process of production, which is to interpret the meaning.

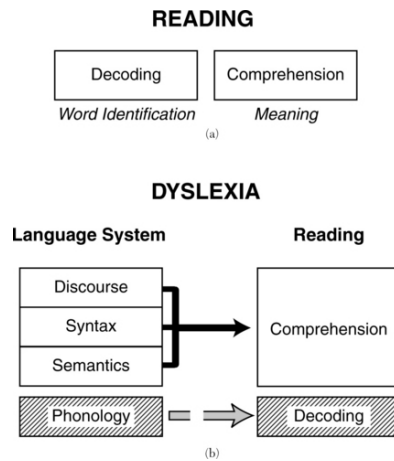


Figure 3. The paradox of dyslexia (Shaywitz, 2003, p. 70)

Shaywitz (2003) explains this situation by asserting that dyslexic individuals have a weaker connection between phonology and decoding than what is, in fact, needed for the establishment of comprehension. Apparently, individuals with dyslexia could receive the ‘input box’ full of fragile appointments and take the road, but they all somehow get broken on the way, and the dyslexics would not even be able to identify what was inside in the first place after opening the box. To be clearer, the image of the words stored in the dyslexic brain after listening and how they are seen in the written form do not match, causing dyslexic individuals to have difficulty in identifying words and making sense of them accordingly. That is why it takes more than usual for them to learn and use the reading skills and complete reading-based tasks successfully.

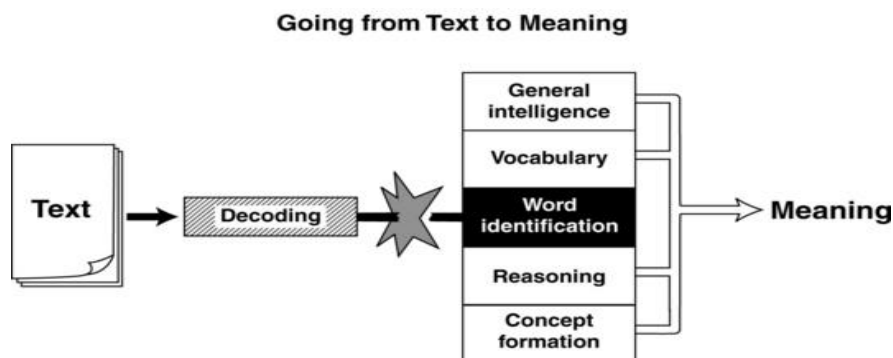


Figure 4. Going from text to meaning (Shaywitz, 2003, p. 72)

As seen in Figure 4, the process of going from text to meaning includes two main stages between the two destinations. Accordingly, when exposed to a text, one is expected to start the act of decoding at the first stage. Following this stage, decoding passes the baton to the second stage, which opens the door for another construction with five distinct sections, namely, general intelligence, vocabulary, word identification, reasoning, and concept formation. Although they do not have a problem with the functioning of the rest of the four, the imaginary cable enabling the information transfer from decoding to word identification does not fit in the dyslexic brain as expected. For that reason, dyslexic individuals cannot really identify the words they are supposed to read, and that hinders them from reaching their destination meaning (Eide and Eide, 2023; Shaywitz, 2003). This being the case, the process of learning a foreign language for individuals with a syndrome causing them to make more effort than normally expected to be able to read and learn even in their native language might be considered a task, leaving them no choice but work much harder than their peers, which might or might not have its pros and cons depending on factors such as age, background, context, individual differences, and so on (Nijakowska, 2010).

2.4.1. The mind of the dyslexic

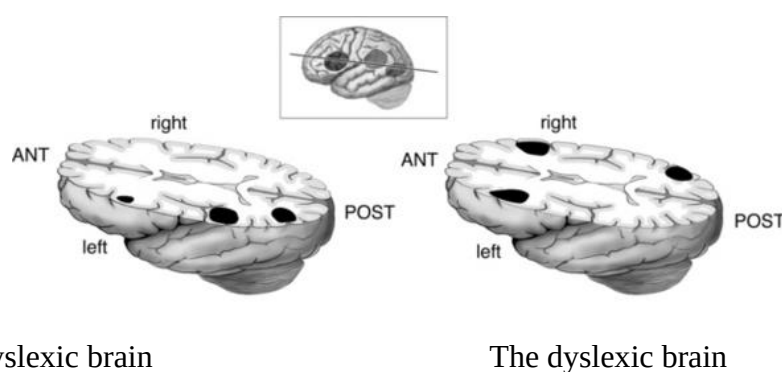


Figure 5. The alternative reading process of the dyslexic brain (Shaywitz, 2003, p. 105)

As can be noticed in *Figure 5*, the dyslexic and non-dyslexic brains demonstrate a certain difference in terms of their spots getting activated in the process of reading. To go into detail, the non-dyslexic brain predominantly appoints the spots at the back of the

left sphere, whereas it is mostly the frontal area of the right sphere for the dyslexic brain. Shaywitz (2003) explains the situation by pointing out that the dyslexic brain, not being able to activate the three spots overseeing reading in the non-dyslexic brain, comes up with alternative ones to compensate for the process. However, taking a different road while reading is not all the dyslexic brain can do. Apparently, the dyslexic brain opens new doors for individuals with dyslexia to think differently. They basically handle topics from different perspectives, solve them in a way that not everyone could think of, and come up with brand-new inventions suddenly. In light of these, it could be interpreted that dyslexia might not be all about difficulties and weaknesses. Hence, the next subsection will elaborate on the strengths of the dyslexic.

2.4.2. Strengths of the dyslexic

According to Shaywitz (2003), anybody should know thinking differently has its positive effects. The scholar added that there were many dyslexic individuals demonstrating strengths in areas such as reasoning and in visual and creative fields. Stressing dyslexia is not a deficit but a talent in her book titled as “Gölgedeki Yıldızlar: Disleksinin Gizli Yetenekleri” (Eriş, 2021), Eriş justifies her point by mentioning how NASA and several tech companies have recently been paying special attention to employ dyslexic people to be able to benefit from their ability to see the bigger picture. In a world where data are in the mainstream, the fact that these people with holistic perspectives can detect and establish connections between certain points out of the flood of constant data and make actual sense of them without losing their paths has become a huge attention-grabber among such companies. On top of that, this is just one of the advantages of the dyslexic brain. The additional advantages of dyslexia mentioned by Eriş (2021) are demonstrated in Figure 6.

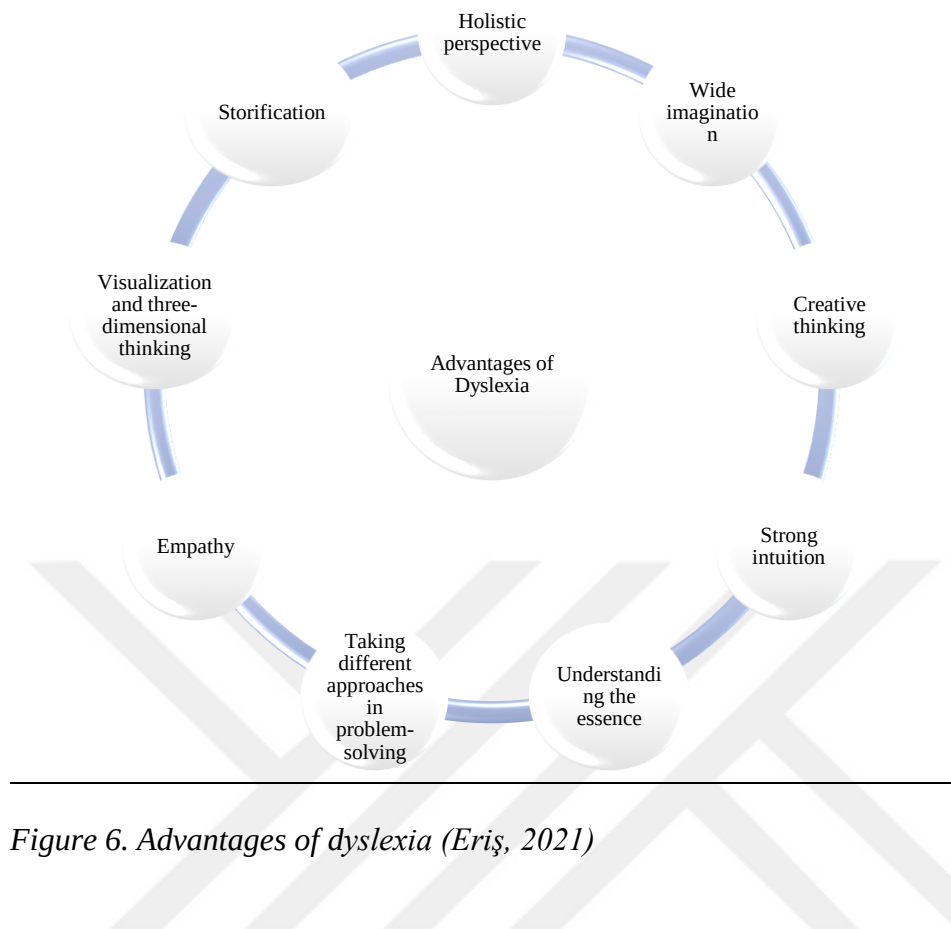


Figure 6. Advantages of dyslexia (Eriş, 2021)

As seen in Figure 6, the core of the advantages of dyslexia, pointed out by Eriş (2021), revolves around different layers of processing and understanding, which are all somehow linked to one another. Individuals with dyslexia view the world around them, which enables them to realize not only what is obvious but the layers, edges, and corners of it, if there is one. They broaden their thinking process by searching for a solution or idea from a wide range of aspects, which opens the door to creative thinking. They also deepen their creative thinking process by trying to come up with ideas or concepts that might underlie a problem. In that vein, people with dyslexia even shift the way they think by looking at the possibilities from the original context of a problem to the opposite and beyond, which strengthens their imagination and intuition and enables them to understand the essence of the matter of fact by developing empathy for the world around them.

2.4.3. Types of dyslexia

Although it is mostly tackled in the literature as one umbrella term, dyslexia, in fact, consists of six different types depending on its development in the brain and symptoms. The related types are briefly defined as follows:

Phonological Dyslexia: In this type of dyslexia, individuals might have difficulty in pronouncing words. It might also include visual processing problems (Friedmann and Coltheart, in press).

Surface Dyslexia: In this type of dyslexia, individuals might have difficulty in recognizing and writing words (Patterson et al., 1985).

Visual Dyslexia: In this type of dyslexia, individuals might have difficulty in reading caused by visual problems due to physical reasons, or visual processing disorders due to cognitive or neurological reasons (Ingram et al., 1970).

Primary Dyslexia: In this type of dyslexia, individuals might have a functional disorder of the brain's left-brain cortex (cerebral cortex), which changes with age. It is known as the most common among the six types (Ikediashi, 2012).

Secondary (Developmental) Dyslexia: This type of dyslexia might be caused by problems in brain development in the early stages of fetal development. It might decrease as the child grows (Friedmann and Rahamim, 2007).

Trauma (Acquired) Dyslexia: This type of dyslexia develops in adults and children due to a damage in the brain caused by a trauma or disease (Marshall and Newcombe, 1966).

As it could be understood from the definitions regarding all these six types of dyslexia, it could be interpreted that the term itself is only the tip of the iceberg. Depending on the type, how it affects individuals' life might demonstrate changes (Kunwar and Sapkota, 2022). For that reason, such details should not be ignored to fully understand these people and come up with more feasible suggestions for raising awareness in the society and facilitate learning under equal circumstances accordingly.

2.4.4. Common Misconceptions about dyslexia

Due to a lack of opportunities in the matter of increasing individuals' awareness of its characteristics, dyslexia has been hand in hand with various myths and misunderstandings (Ness and Southall, 2010). It is assumed that every dyslexic must demonstrate the same symptoms from A to Z, and when it is not the case for the child, the process might end up with false diagnoses. The following most common misconceptions about dyslexia and dyslexic individuals are listed and discussed.

a. People with dyslexia perceive some of the letters in the alphabet in reversed shapes or must write them down in such ways (Thorwarth, 2014): Even though it is accurate that dyslexics have difficulty in matching letters and words with appropriate labels and names, there has been no proof regarding that they perceive the letters and words in a reversed way (Shaywitz, 2003).

b. People with dyslexia is automatically equipped with mirrored writing and that people demonstrating such a symptom are dyslexic: In fact, most children go under such a stage in the process of learning their writing skills. Thus, it could be stated that forming a premature judgement on the related matter might end up with a false alarm. However, in the case of the same ongoing symptom even at the following stages of the learning process (i.e., after the first grade), that might necessitate an evaluation for a better understanding of the reasons behind it (Washburn et al., 2011).

c. Dyslexia occurs because of poor eyesight: Although, it is possible to state that some individuals with dyslexia can have difficulty in processing concepts visually, it would not be accurate to reckon it as a vision-related issue (Fletcher and Currie, 2011). Here, the case is that the eye can normally see what is shown but might not establish a healthy connection between the visual and what is stored in the brain to recognize and process it as it should, which leads to difficulty in reading. Therefore, it could be stated that dyslexia and poor eyesight are not necessarily related to each other (2011).

d. The rate of individuals with dyslexia is quite low around the world: Some might assume so because limited number of studies focusing on dyslexia in the literature or limited number of cases encountered in the daily life. However, it has mostly been acknowledged in the literature that dyslexic individuals form between 5 to 10% of the world population, which could be inferred as frequent as one student in every classroom

(Pan, 2023). It should also be noted that there might be much more dyslexic individuals out there around the world but not identified yet because its symptoms might be mistaken for other reasons such as poor eyesight or laziness etc. That is why, it might be stated that an assumption of a low frequency rate for dyslexia does not quite match with the reality (2023).

e. Dyslexic individuals have difficulty in reading and spelling because of the negative influence of their low intelligence (Gray, 2008): Dyslexia and intelligence are not related to one another. Hence, it could not be argued that one affects the other negatively. Just like any human being, dyslexic individuals could also have different level of intelligence (Campbell, 2013). They might be slower at producing the expected outcomes than their peers; however, that is not because of an intelligence issue but the fact that their brains process information differently (Ewing and Parvez, 2012).

f. The reason behind ongoing difficulties dyslexic individuals has in reading and spelling even after the first grade is their laziness: Not being able to perform in reading and spelling in the expected way gives teachers and parents the impression that the student in question deliberately acts so since they are not interested in learning. Being identified as lazy, the student also gets the wrong idea, starts believing that they are going to fail in the end whether they try, and chooses not to try at all as a safe solution (Gwernan-Jones and Burden, 2009). One of the most common reasons for such a misassumption is their lack of knowledge about dyslexia. According to FMRI research (i.e., Functional Magnetic Resonance Imaging) conducted by Shaywitz (2003), the process of reading and language-related activities take place differently in the brains of the dyslexic and the non-dyslexic. For the case of the dyslexic brain, it differs from the non-dyslexic one with some of its parts functioning much more actively than usual while some others not even being active in the expected way, which may result in delayed success in processing information out of written language. In short, it is the way the brain of individuals with dyslexia works. It just works differently.

g. Dyslexic symptoms are only limited to one's native language: Being present in any language possible, dyslexia is not a condition suddenly disappearing while dealing with additional languages. However, there might be cases where the student might not be diagnosed as dyslexic yet but only assumed to be in the state of learning a new language because of their possible slow reading pace (Lama, 2019).

h. All individuals with dyslexia have the same symptoms and characteristics: The earliest symptoms of dyslexia develop in childhood. It especially occurs at the age of 1-2 when children learn to make sounds. However, not every person with a speech delay is called dyslexic. The symptoms of dyslexia might vary depending on age and person. At young ages, situations such as speaking late, having difficulty learning new words, and encountering problems while playing games might occur. The symptoms often become more distinct as children start school. In their book on the advantage of having a dyslexic brain, Eide and Eide (2023) point out that dyslexia certainly affect individuals' reading and writing skills due to the disharmony between the phonological input they are exposed to and how they take it when it comes to decipher the written form. However, the authors assert that the dyslexic brain has lots of potentials showing themselves in ways changing from person to person. Summarizing their assertion with the MIND model (i.e., mechanical, interconnected, narrative, dynamic), Eide and Eide (2023) explain that dyslexics could have aptness to one or more than one type of four main areas of reasoning necessary for different work areas. Accordingly, they unfold the areas of reasoning as mechanical (e.g., architects, surgeons), interconnected (e.g., artists, inventors) narrative (e.g., novelists, lawyers), and dynamic (e.g., scientists, business pioneers).

i. It is not likely for an individual to be both dyslexic and gifted: Names such as Albert Einstein, Thomas Edison, Leonardo da Vinci, Agatha Christie, and Muhammed Ali who were only some of the gifted individuals known with the symptoms of dyslexia could be provided to object that dyslexia does prevent the gifted from being gifted because the two do not have a negative relationship between each other (Eriş, 2021).

j. Medicines are prescribed for the treatment of dyslexia: It is not medication but therapy and individualized education programs (IEP) that are generally applied during the treatment process of dyslexia. IEP is acknowledged as an effective method as it both supports the normal school education and reinforces the needed areas (Torgesen, 2000).

k. Dyslexia could be cured completely (Gray, 2008): International Dyslexia Association (IDA) declares that dyslexia is not developmental in nature; therefore, it does not have a concrete ending point (2002). Rather, it is possible to remediate its symptoms through instructions suitable for the individual. To achieve that, what might be effective is the collaboration among parents, teachers, and the dyslexic student alongside of counselling service (O'Connor, 2000).

1. There is nothing teachers could do to make the learning process easier for their dyslexic students: Through individualized education programs developed through the collaboration among parents, subject teachers, guidance counsellor, and the dyslexic student, it is possible to help dyslexic students receive education as efficiently as possible (Kirschner, 2015; Torgesen, 2000).

Taking into consideration all these assumptions about dyslexia sharing one common point that is being wrong, it could be rearticulated that the symptom might be misinterpreted by some as a rare disease on poor eyesight with its medical treatments and non-treatable learning processes for the ones affected (Fletcher and Currie, 2011; Gray, 2008; O'Connor, 2000). On the top of that, it might make way for teachers' unfair or ineffective ways of treatment in the classroom and that might cause dyslexic students to lose all their interest and motivation in their target language learning process without having a chance for development and showing their actual potential (Kirschner, 2015; Torgesen, 2000). For that reason, the primary focus in the society should be on the area of education: The educators themselves should be educated with a raise in awareness so that the learning needs of all students, including the dyslexics, could be met under equal circumstances (Balci, 2019; Indrarathne, 2019; Kamala, 2014; Lama, 2019).

2.5. Dyslexia in education

Reading is a vital tool for engaging and learning most of the subjects taught in school and for further purposes in different areas of life (Young and Rasinski, 2009). As a result of the growing need and emphasis on education and literacy, all school-age individuals need help learning to read, spell, express their thoughts on paper, and acquire adequate use of grammar (Tops et al., 2012). According to American Psychiatric Association (2013), the global rate of students not being able to learn as successfully as they are supposed to is around 15%. Among these individuals, 80% of them is estimated to have difficulty in reading (Yurdakal and Kırmızı, 2015). Looking at the students falling behind in reading closer, the most prevailing reason behind their situation is suggested to be the syndrome called dyslexia (Wagner et al., 2020). In their study, Soğancı and Kulesza (2023) assert that students with dyslexia who find it difficult to acquire these literacy skills might encounter traumatic experiences such as being mentally abused by

their peers in the school environment. To alleviate such situations, it is teachers' responsibility to raise awareness in the classroom and integrate their dyslexic students into a classroom environment where they could feel comfortable and develop self-confidence (El Arbaoui, 2022). Kooij (2013) suggests that dyslexic students need to be provided with one-on-one support alongside of inclusive classrooms to develop confidence about learning in their own pace instead of putting the blame on themselves for falling behind their peers. Teachers might prejudge that the inconsistent failure of students with dyslexia is due to inattention, lack of effort, or even a situation related to their intelligence (Smart, 2011). Not being able to follow simple instructions as easily as their peers, the dyslexic students feel "not normal" and even isolate themselves from the rest of the classroom by believing that they are the problem (El Arbaoui, 2022).

Classroom teachers have the responsibility of providing an environment conducive to learning for all students in the classroom. They need to understand the problems that dyslexic students might experience in the classroom (Tosun et al., 2021). In a positive and encouraging environment, students with dyslexia experience a sense of accomplishment and self-worth (O'Brien, 2021). As a part of the symptoms of their syndrome, some dyslexic students might not be successful at processing the input they receive due to their poor verbal short-term memory. Those who experience poor verbal short-term memory might have difficulty in remembering spelling letters that match sounds in spoken words. Often, students with poor verbal short-term memory cannot remember even a short list of instructions (Majerus and Cowan, 2016).

Time spent in education is a significant part of their development, just like their peers. Due to their learning differences, the brains of the dyslexic students put them in a state of preventing information from being processed in the brain as successfully as those without the syndrome, and make learning slower, more difficult, and even impossible at times (Ziegler and Goswami, 2005). However, with tested strategies under the guidance of a caring teacher, dyslexic students can learn and succeed (Cimermanová, 2015).

2.6. Teaching methods and techniques used for students with dyslexia

There are essentially four main approaches for teaching students with dyslexia: individualized programs, support strategies, teacher-assisted methods, and whole-class

techniques (Shaywitz, 2003; Davis et al., 2004). Among these, individualized programs are the most frequently utilized. These programs are typically highly structured, often operate independently, and play a central role in instruction. They generally incorporate some or all of the following principles (2004).

1. Multiple perception,
2. Excessive learning and automaticity,
3. Highly structured and often voice-based,
4. All or some of the sequential and cumulative principles.

The multisensory method, used for years in educating students with special needs, engages all the senses simultaneously (Hickey, 2007). It can be summarized as “listen, say, see, and write” (Supriatna and Ediyanto, 2021). Duke and Block (2012) highlighted that the most effective strategy to prevent and address reading difficulties includes clear, systematic instruction, early letter recognition, and phonemic awareness. This approach involves teaching letters, letter-sound coding skills, both supported and independent reading exercises with a focus on fluency, and reading comprehension within the context of the text. Similarly, the International Dyslexia Association (IDA, 2012) created a matrix to identify effective practices that support skill development, with some examples outlined in the following lines.

2.6.1. Alpha to omega

Alpha to Omega is a phonetic and linguistic method for teaching reading, which can be utilized as either a program or resource material. It is a systematically structured approach that supports both phonological and language development. The method focuses on teaching the 44 phonemes in English, including 17 vowels and 27 consonants. It also highlights the importance of understanding language structure by using words within the context of sentences. The program offers a highly organized format for teaching sentence construction and grammatical structure, and includes a component called Learning Games, designed for children under five. These games, organized in structured stages, are multisensory and aim to enhance language development through visual and auditory perception, pre-reading skills, spatial

relationships, and knowledge of colours, numbers, and directions (Davis, 2002; Hayward, 1994; Hughes, 2003).

2.6.2. Orton-Gillingham

Programs utilizing this approach have become a key element in multisensory teaching for children with dyslexia (Snowling and Hulme, 2012). These programs employ a structured, phonics-based method that integrates a comprehensive language experience, emphasizing letters, sounds, and the blending of these sounds into syllables and words. The approach primarily focuses on the interaction between visual, auditory, and kinesthetic aspects of language (Moats, 2000). Orton-Gillingham lessons consistently include card practice, spelling, and reading activities, and often feature additional exercises such as (Sayeski et al., 2019):

1. Card practice: Involves the use of commercial or teacher-made cards. Common letter patterns to reinforce the visual method. These card exercises help blend phonemes (sounds), auditory, kinaesthetic skills, and syllables.
2. Word and phrase lists.
3. Oral reading selection (teacher reading first, then student reading).
4. Spelling of phonetic and non-phonetic words.
5. Handwriting (paying attention to pen holding, writing stance and letters).
6. Composition (encouragement to improve writing sentences, paragraphs, and short texts).
7. Stories

2.6.3. Hickey Multisensory Language Course

Hickey Multisensory Language Course emphasizes the importance of sequential and structured instruction when teaching the alphabet and letters (Hickey, 2007). Students with dyslexia often struggle with learning and recalling the names and order of letters, as well as understanding that letters represent the speech sounds that form words (Cunningham and Stanovich, 1998). The program, grounded in multisensory principles, starts with teaching the alphabet using wooden or plastic letters. This allows students to

see, touch, and articulate the sound of each letter with their eyes open or closed, engaging all visual, auditory, and tactile-kinesthetic learning channels. The program also includes activities to help students become familiar with the alphabet: learning the letters in sequence, understanding their positions, and recognizing and naming their shapes (Hickey, 2007).

2.6.4. Bangor Dyslexia Teaching System

The Bangor Dyslexia Teaching System offers a structured, sequential approach to instruction designed for teachers and speech and language therapists to support children with dyslexia. One notable feature of this program is its differentiation between primary and secondary school readers. Although readers at both levels start with the same foundational literacy stages, it is recognized that some secondary students may still be at an early stage. The program includes specialized activities for beginning readers and adaptations for high school students (Hughes and Roberts, 2008).

The program's core philosophy aligns with other phonics-based programs for dyslexia, focusing on phonological challenges and aiming to help dyslexic students master the alphabetic code as early as possible. It also acknowledges that dyslexic students may struggle with visual and auditory processing. Like other similar programs, it is highly structured and requires systematic implementation by the teacher. Emphasis is placed on overlearning and revisiting previously covered material to reinforce learning (Rose, 2009).

2.6.5. Barton Reading and Writing System

The Barton Reading and Writing System is a thoroughly structured literacy program designed to offer consistent instruction to students with dyslexia (Barton, 2000). It features ten distinct levels, each comprising 10 to 15 lessons, along with various exercises and games to enhance learning. The levels are structured in a way that allows instructors to provide tailored support without needing to be familiar with all ten levels beforehand. The program includes activities such as games and dictionary use to aid students (Barton, 2016).

2.6.6. New Herman Method

The New Herman Method, designed for students in grades three through six, seeks to enhance reading comprehension by adopting a multidimensional pedagogical approach. This method entails the segmentation of students into smaller groups to facilitate targeted instruction in foundational areas, including reading, writing, and spelling. A key component of the method is the use of a strategy known as reading attribution, which aims to foster greater student engagement. Additionally, the program integrates contemporary, culturally sensitive materials, such as stories and images, to ensure relevance and inclusivity in the learning process (Herman, 1993).

2.6.7. Natural Reading

Natural Reading employs a synergistic combination of three evidence-based instructional strategies to address the needs of students with learning disabilities, including dyslexia (Stai, 2020). By integrating these strategies, the approach aims to improve students' fluency, vocabulary, and reading comprehension. The Natural Reading framework provides a range of intervention programs designed for students from kindergarten through eighth grade. These programs vary in format, including web-based platforms and print materials with accompanying audio CDs. Each program is tailored to address specific learning areas and incorporates distinct lessons and methodologies to support targeted educational outcomes (Mesmer and Griffith, 2005).

2.6.8. Wilson Reading System

Wilson Reading System, the inaugural program developed by the Wilson Language Education Foundation, provides a rigorous and systematically structured approach to literacy instruction for learners across all age groups, from elementary school students to adults. The program focuses on fundamental literacy skills, including phonemic awareness, sight-word recognition, and decoding. Instruction can be delivered in individualized one-on-one sessions or in small groups of up to six students. The program also offers a range of advanced support tools for educators, including workshops and

online courses. The Wilson Reading System has received full endorsement from the International Dyslexia Association (IDA, 2012).

2.6.9. Lindamood-Bell Programs

Lindamood-Bell Programs emphasize personalized instruction to enhance reading comprehension (Lindamood and Lindamood, 1979). These programs begin with a comprehensive assessment designed to identify each student's strengths and weaknesses. Based on the assessment results, educators create an individualized program tailored to address the specific learning disabilities of the student. Instruction is delivered through one-on-one interactions, ensuring that each student receives focused and attentive support (Ritchey and Goeke, 2006).

In summary, various methods and techniques such as Alpha to Omega, Orton-Gillingham, Hickey Multisensory Language Course, Bangor Dyslexia Teaching System, Barton Reading and Writing System, New Herman Method, Natural Reading, Wilson Reading System, and Lindamood-Bell Programs have been employed to support dyslexic students. These methods are recognized for their effectiveness in enhancing various aspects of reading and writing skills. To address the specific needs of dyslexic students, educators should use their professional judgment to select and implement the most appropriate methods (Tosun et al., 2021). Furthermore, incorporating these approaches into in-service teacher training programs is essential for updating teachers' skills and ensuring they can effectively meet the learning needs of their dyslexic students by adapting the most suitable strategies in their classrooms (Balci, 2019).

2.7. Teachers' knowledge of dyslexia

Preparing students for the facts of life, teachers are provided with opportunities to meet students with innumerable different characteristics, backgrounds, and needs, affecting their whole learning process in different ways. For every student to complete this preparation process successfully and under equal conditions, teachers themselves are expected to have already been prepared to accommodate themselves to any SpLDs to be encountered in the classroom and what they necessitate in the pedagogical sense.

Dyslexia, a neurobiological syndrome causing individuals to have difficulty in reading, writing, and spelling due to the incompatibility in the process of identifying speech sounds and decoding, is one of the many differences the worldwide incidence rate of which increasing from a 5-10% (Erkan et al., 2012; Krzyzak, 2006; Nijakowska, 2014; Stein, 2001) to over 20% within two decades according to recent literature (Shaywitz et al., 2021). However, Pan (2023) argues that lack of evidence in the scholars' research might not be sufficient to acknowledge its related implication yet.

Moreover, according to the National Center for Statistics (2008), it is predicated that dyslexia comprises 80% of students with special education. However, there is another cluster of differences on the sides of teachers in terms of the extent they are aware, knowledgeable, and prepared when it comes to how to approach students with this prevalent syndrome that they are likely to encounter or have already encountered in their classrooms without even realizing it (Arapogianni, 2003; Constantopoulou, 2003; Fekih, 2019; Hornstra, Denessen, Bakker, Van den Bergh and Voeten, 2010; Indrarathne, 2019; Tobbi, 2020). This being the case, neither dyslexic students nor teachers are likely to have experiences in their learning and teaching processes without facing any obstacles. One of the reasons why both sides face obstacles during these processes could be explained by the teachers' low level of dyslexia awareness (Dada and Sulyman, 2021; Kodan, 2020; Alahmadi and El Keshky, 2019; Ness and Southall, 2010).

In their study, Mullikin et al. (2021) examined the dyslexia knowledge of kindergarten and primary school first-grade teachers working in the state of Massachusetts in the United States by considering different variables. In that study, conducted in the 2018/2019 academic year, the data was obtained with a survey consisting of 63 questions and aiming to determine teachers' dyslexia knowledge, self-confidence, and readiness, as well as their perceptions of their own formal and informal education experiences, professional experiences and professional development. As a result of the research, it was concluded that teachers had misconceptions about their knowledge about dyslexia, but they showed high performance in the items dealing with teaching strategies and classroom management for dyslexia. Moreover, the dyslexia knowledge of teachers with more years of experience in the profession was found to be higher than that of teachers with less professional experience.

Dada and Sulyman (2021) explored the knowledge of learning differences among 100 primary school teachers in Ilorin South Local Government Area, Kwara State, Nigeria.

The data were obtained using the Classroom Teachers' Knowledge of Students with Learning Disabilities Test (CTKSLDT) developed by the researchers. The data collection tool consisted of two sections, and the first part included the demographic information of the teachers. The second section included 15 items determined for learning differences. As a result of the research, it was revealed that teachers' knowledge about students with learning differences was quite low. It was also realized that the knowledge teachers had about students with learning differences differed significantly according to the gender variable. In this study, it was observed that the school types of the teachers created a significant difference in their knowledge about students with learning differences. Teachers' specialization in their field also created a difference in their knowledge about students with learning differences. This differentiation was determined to be in favour of teachers specializing in the fields of pre-school, primary school, and special education teaching.

In a study by Yin et al. (2020), the researchers investigated the dyslexia knowledge of early literacy teachers in China, focusing on differences between those in developed and less developed regions. The participants were 203 kindergarten and 166 primary school teachers from developed regions of China, and 147 primary school teachers from less developed regions, for a total of 516 teachers. The data were obtained through a survey prepared to measure general knowledge about dyslexia, information about its symptoms and diagnosis, and treatment. As a result of the research, it was disclosed that teachers working in less developed regions had less knowledge about dyslexia than those teaching in developed regions. No difference was found between kindergarten and primary school teachers working in developed regions. Likewise, misconceptions were found to be higher among those teaching in less developed regions. When teachers were examined according to past experiences with dyslexic students, it was seen that the ones who worked with a dyslexic student had a significant difference in their dyslexia knowledge. In that context, it was suggested that teachers working in underdeveloped regions should receive training on dyslexia.

Similarly, White et al. (2020) assessed pre-service teachers' knowledge of dyslexia in the United States, though the study also explored their sense of responsibility towards 243 dyslexic students, both studying in the field of education and other ones. The data were obtained using the Dyslexia Knowledge and Insight Survey (KIDS). The departments of the teacher candidates continuing their university education in the field

of education were special education, general education and school psychology students, and the ones studying outside the field of education were architecture students. Considering the survey responses of the participants, no significant differences could be detected. It was stated that students in the field of education held themselves moderately responsible for students with dyslexia, and those who felt the most responsibility were seen as special education students. Additionally, it was observed that the pre-service teachers had misconceptions by defining dyslexia as reading backwards, which highlights a consistent issue of misconceptions across different educational contexts, as observed in Yin et al. (2020)

In contrast, Kalsoom et al. (2020) Kalsoom et al. (2020) focused on secondary school teachers in Lahore, Pakistan, examining their perceptions and practices regarding dyslexia. Constructed upon the quantitative research design, the data were obtained through a survey developed by the scholars themselves. The research was conducted with 328 teachers working in public and private secondary schools in the relevant city. Unlike the studies by Yin et al. (2020) and White et al. (2020), no significant difference was detected in teachers' perceptions of dyslexia between working in a private school and going on strike in a public school. The gender of the teachers did not lead to a difference in their perception of dyslexia, either. As a result of the study, it was concluded that teachers knew the concepts of dyslexia and the difficulties experienced by dyslexic students. Moreover, it was found out that teachers were in tendency to support the dyslexic students to increase their self-confidence. In addition, it was realized that the dyslexic students did not progress simultaneously with their normally developing peers, which was causing them to need more time than their peers and the teachers to have difficulties accordingly.

Alahmadi and El Keshky (2019) conducted a broader study in Saudi Arabia, examining the knowledge of SpLDs among 902 primary school teachers of 78 schools in different regions. The data were obtained using a 40-item knowledge survey addressing learning difficulties and aiming to measure teachers' knowledge. As a result of the research, it was concluded that more than half of the teachers (64.52%) had average knowledge about learning difficulties, while it was insufficient for less than half of them (35.48%). In addition, a significant relationship was detected between the demographic characteristics of the teachers and their knowledge levels, and a significant difference was found between the gender variable and the knowledge levels of learning disabilities.

In that study, it was unfolded that teachers' knowledge of learning disabilities was insufficient, and that they did not have an idea about what to do when encountered a dyslexic student.

Sharing a common point with the previous literature in their findings (e.g., El Keshky, 2019), Basim et al. (2019) conducted a cross-sectional study in Kerala State, India, to evaluate primary school teachers' knowledge of SpLDs. From April 16 to May 20 in 2018, the study took place with the participation of 709 classroom teachers working in 21 different public schools in Malappuram district of Kerala State, India. The data were obtained using a survey to determine teachers' knowledge about SpLDs. As a result of the study, it was found out that most of the teachers had knowledge about the consequences and treatment of SpLDs but were not sufficient about the causes and definitions. In that regard, it was revealed that teachers were quite inadequate to carry out useful work for children with SpLDs in classroom adaptations. Accordingly, it was suggested that teachers needed to be informed to expand and improve their existing knowledge about SpLDs and to recognize early symptoms. This aligns with the findings of Alahmadi and El Keshky (2019), where teachers also showed gaps in practical knowledge, suggesting a common issue across different countries.

The study conducted by Ghimiare (2017) included 150 primary school teachers working in 16 different primary schools in Dharan province of the Federal Democratic Republic of Nepal. The data were obtained by developing a structured information survey addressing SpLDs. Similar to the findings of Basim et al. (2019), many teachers had moderate knowledge, but nearly half lacked sufficient understanding. To be more specific, it was found out that 85.5% of the teachers did not take a course or course regarding SpLDs, 69.5% had never taught a student with a learning difference, and 30.5% of the teachers were able to recognize the SpLDs in the students. In addition, it was found that 52.67% of the teachers had moderate knowledge of SpLDs, while 47.33% of them had insufficient knowledge. Considering the results, it could be deduced that the teachers were aware they were not competent in recognizing SpLDs.

Echegaray-Bengoa et al. (2017) explored the knowledge and misconceptions about dyslexia among prospective and in-service teachers in Peru. The study group consisted of 112 prospective and 113 in-service teachers. The data were obtained by means of the Knowledge and Beliefs about Developmental Dyslexia Scale (KBDDS). As a result of the study, it was disclosed that the in-service teachers had a higher level of knowledge

than the prospective ones. In addition, it was revealed that the prospective teachers' misconceptions were at a higher level. What was more, a positive significant relationship was found between teachers' age, gender, professional experience, encountering a student with dyslexia, and their self-efficacy and dyslexia knowledge, similar to the demographic factors noted in Alahmadi and El Keshky (2019).

Sari (2017) focused on the knowledge and experiences of teachers working in inclusive primary schools in Yogyakarta, Indonesia, in relation to SpLDs. As for its participants, the study group consisted of 30 general education teachers. The data were obtained through observation forms and questionnaires. Focus group discussions were held to learn the teachers' knowledge and experiences on the subject. Afterwards, a survey and observation guide were provided to identify students at risk of SpLDs. Teachers discussed with each other about the difficulties and problems experienced in identifying children with SpLDs, and a survey was used to unveil the changes in teachers' perceptions because of the discussions. The study revealed that teachers still did not know how to distinguish students with SpLDs. This finding is consistent with the results of Ghimiare (2017) and Basim et al. (2019), where teachers' ability to recognize SpLDs was limited. The study further emphasized the need for better identification tools and training, similar to the recommendations made by Yin et al. (2020) and other researchers.

Finally, Ness and Southall (2010) examined the knowledge and beliefs about dyslexia among 287 pre-service teachers from Alabama, New York, and Virginia. The data were obtained through an open-ended survey prepared by the researchers. Participants were asked to describe dyslexia, describe the characteristics of dyslexic students, state their ideas about effective teaching methods for them, and provide the sources of all the information they had about the syndrome. As a result of the study, it was found that the participants were aware that dyslexia is a learning difference related to reading skills but were not sure about the processing of its phonological components and had misconceptions about it. This aligns with the misconceptions found in White et al. (2020) and further underscores the ongoing challenge of addressing dyslexia-related misunderstandings in teacher education.

When it comes to reviewing the related literature in the context of Türkiye, it could be stated that the findings align with international research. The study conducted by Ertaş (2022) aimed to measure the knowledge levels of preschool teachers working in Edirne,

Türkiye regarding SpLDs consisting of 174 participants, selected through random sampling method, the study was based upon the relational screening model. General Information Form, Dyslexia Knowledge and Belief Scale and Teacher Efficacy Scale for the Inclusion of Children with Special Needs were used to collect data. As a result of the study, the preschool teachers' general knowledge of SpLDs, its diagnosis and treatment were found to be inadequate. It was stated that there was a positive, low-level significant relationship between teachers' knowledge levels and self-efficacy. It was found out that teachers' knowledge of SpLDs varied depending on gender, whether there were students with special needs in the classroom, whether they had a special education certificate or had training for learning disabilities, and whether they attended in-service training or seminars on inclusive education. It was indicated that the institutions where teachers worked did not have a significant difference in their general knowledge of learning disabilities, but of diagnosis and treatment.

Çoğaltay and Çetin (2020) examined the self-efficacy of classroom teachers in Siirt, Türkiye, regarding SpLDs. The study group of the research consisted of 12 teachers working in Siirt, Türkiye. Being a case study, one of the qualitative research designs, the study included interview as the data collection tool. As a result of the research, the conclusions could be listed as follows: Teachers' knowledge of SpLDs was inadequate. Most of what they knew was in fact misconceptions. They had inadequate knowledge of guiding students with SpLDs. They felt inadequate in their practices and believed that their lack of knowledge of SpLDs resulted from not being provided with a specific training on them.

Şahin et al. (2020) explored classroom teachers' knowledge and attitudes towards dyslexia in Tokat, Türkiye, with a study group of 345 teachers. Data collected from teachers were obtained through the Dyslexia Attitude Survey. As a result of the study, teachers' attitudes towards dyslexia were generally found to be positive. They defined dyslexia as difficulty in learning the order of syllables and numbers. They also believed that it was the case of writing letters and numbers backwards. According to the teachers, dyslexic individuals had a difficulty related to both text and words. They also stated that dyslexia were treatable and that dyslexic individuals might be talented. Apart from those, the teachers pointed out that they needed training on the diagnosis of dyslexia and the characteristics of dyslexic individuals.

In a mixed-method study conducted by Kodan (2020) in Bayburt, Türkiye, the knowledge and experiences of 50 classroom teachers regarding reading difficulties were examined. The study used the Knowledge Scale on Reading Disabilities for Teachers and a qualitative survey was applied so that the participants' opinions on detecting, evaluating and interventions for reading difficulties could be received. As a result, the teachers' knowledge of reading difficulties was found to be inadequate. According to them, the reason behind the SpLDs students experienced was the lack of education and carelessness of their families. The teachers also stated that they carried out one-on-one studies for students with SpLDs outside of structured class hours, and that they made individual evaluations of the students in the studies but did not make evaluations about their development processes.

Ketenoglu-Kayabaşı (2019) studied the relationship between classroom teachers' knowledge and skills regarding reading difficulties and their classroom adaptations in Kastamonu, Türkiye. Teachers were selected by criterion sampling method, one of the purposeful sampling methods. The data were collected through observation form, semi-structured interview form and teacher opinion survey. As a result of the study, it was found out that the teachers' knowledge levels were adequate in theory but inadequate in practice. In addition, it was stated by the teachers that they neither paid special attention to students with reading difficulties nor provided early and effective intervention. According to them, even though they tried various applications, the teachers did not use them for the students with reading difficulties specifically but for the whole class.

In the same academic year, Arttırıcı (2018) investigated the knowledge levels of 203 vocational high school teachers in Izmir, Türkiye, regarding SpLDs. The data were collected through the Specific Learning Disability Questionnaire. Teachers' knowledge levels of SpLDs were examined within the framework of different variables such as age, professional experience, gender, finding their knowledge sufficient regarding specific learning disabilities, and teachers' educational status. As a result of the study, it was realized that half of the teachers (50.2%) were not knowledgeable about SpLDs. As for the rest, 45.8% had medium level knowledge and 3.9% had high level knowledge. It was also observed that teachers' knowledge of SpLDs did not differ depending on their age, years of service, educational background, gender, and knowledge of learning disabilities.

Köşk (2019) examined the knowledge levels of 150 subject teachers working in secondary education institutions in Kahramanmaraş, Türkiye, regarding SpLDs, with a focus on reading difficulties. The data were collected through the Learning Disability Information Form. According to the results of the study, it was stated that teachers' years of professional seniority, educational status, subjects, special education training, presence of students with special needs in their classes, and having a relative with a learning difference made a difference in their knowledge levels.

In their study, Başar and Göncü (2018) aimed to reveal the misconceptions of classroom teachers about SpLDs and to increase their knowledge of learning disabilities to eliminate these misconceptions. The study was conducted with 102 teachers working in Uşak, Türkiye and the data were collected through the Learning Disability Knowledge Test pre-test and post-test and the Word Association Test. Two weeks after the pre-test, teachers were provided with a five-hour training on SpLDs, and post-tests were provided two weeks after the training. While the number of repeated words in the pre-test was 538, it was 2599 in the post-test. In that context, the training provided for the teachers successfully reduced their misconceptions.

Arabacı (2018) also explored knowledge related to SpLDs but targeted prospective classroom teachers across four universities. The study group of the research consisted of 213 senior classroom teaching students studying at four different universities in the spring semester of the 2016/2017 academic year and the fall semester of the 2017/2018 academic year. The data were collected through seven open-ended questions and the Question List on Specific Learning Differences. Unlike Başar and Göncü's study, which directly measured knowledge improvements post-training, Arabacı found that prospective teachers had a medium level of knowledge and felt particularly uninformed about educational methods for students with SpLDs. The participants, however, considered themselves knowledgeable in terms of the symptoms and characteristics of such students. The prospective teachers further pointed out that the internet was the platform where they could receive information about SpLDs, but that it was also the least reliable one as they were not quite sure what exactly to look for. Hence, they also added that they were willing to receive training to improve themselves.

Aslan (2016) similarly examined the knowledge of 113 classroom teachers working in Sinop, Türkiye regarding dyslexia and their classroom activities with the aim of disclosing the relationship between teachers' gender and socio-economic level, the

diagnosis process, and their knowledge about the education of dyslexic individuals. The data were collected through the Teacher Knowledge Test. The findings demonstrated that teachers used special methods in the classroom for their dyslexic students. They emphasized the significance of patience and repetition in the education of such students and mentioned that they allocated additional time for them. With this study, it was concluded that the training provided for teachers regarding dyslexia would also support the methods to be applied in the classroom.

Altuntaş (2010) focused on measuring dyslexia knowledge among teachers in Ankara, Türkiye, similar to Aslan's (2016) focus on dyslexia in Sinop. Here, the aim was to measure the dyslexia knowledge of classroom teachers and reveal how they treated the dyslexic students. With the participation of 77 teachers working in schools in Ankara, Türkiye, the data were collected through the Dyslexia Knowledge Test and Teacher Information Form developed by the researcher. To unveil teachers' pre-diagnostic guidance and post-diagnostic intervention information, the Teacher Information Form was used while having interviews with the participants having dyslexic students in their classrooms. As a result of the study, no significant difference was detected between the socio-economic locations of the schools where teachers worked and their dyslexia knowledge. Similarly, there was no difference in whether teachers had dyslexic students or not. However, unlike Aslan's (2016) findings of effective classroom strategies, Altuntaş found that teachers felt inadequate in their intervention methods for dyslexia and did not employ specific strategies in the classroom.

Kaptanoğlu (2016) expanded on the theme of teachers' knowledge and attitudes towards SpLDs but conducted the research in the Turkish Republic of Northern Cyprus with a larger sample of 314 teachers. The data were collected through a questionnaire prepared by the researcher with three parts. The first part of the questionnaire consisted of a demographic information form, whereas the second part consisted of the Specific Learning Difference Attitude Scale and the third part with information questions on SpLDs. As a result of the study, it was revealed that out of the participants, the teachers showing more positive attitudes towards SpLDs were the ones being disposed to learn about them, having students with SpLDs in their classrooms, having encountered such students during their career, and thinking they had adequate knowledge of them.

Yiğiter (2005) explored classroom teachers' attitudes towards the inclusion of students with SpLDs and their knowledge levels of them. In the study, consisting of 164 teachers,

the data were collected through the Question List on Specific Learning Differences developed by the researcher, the Opinions on Inclusion Scale adapted to Turkish by Kırcaali-İftar (1996, as cited in Yiğiter, 2005) and the Teacher Information Survey. As a result of the study, it was found out that the participants' knowledge of SpLDs differed according to the variables of age, gender, whether they regarded their knowledge of SpLDs adequate, the institution they worked at, the status of receiving education for SpLDs, and the number of students in the classroom. It was also unfolded that the attitudes of teachers having knowledge of SpLDs and the ones having a relative with SpLDs had more positive attitudes towards the inclusion of students with such conditions. Lastly, while it shared similarities with Kaptanoğlu's (2005) research in examining attitudes, Yiğiter's study also found that knowledge did not necessarily correlate with more positive attitudes towards inclusion, contrasting with findings from other studies where knowledge and positive attitudes were closely linked.

When the literature focusing on the investigation of knowledge and self-efficacy, awareness, and attitudes about specific SpLDs and dyslexia was examined, it was noticed that the findings were similar to each other. Regardless of which data collection tool was used in what context, the responses of participants implied that both prospective and in-service teachers needed training to be informed about dyslexia. In that regard, it could be deduced that teachers' lack of knowledge regarding dyslexia is a universal issue and planning the training on the syndrome could be one solution for it (Arapogianni, 2003; Constantopoulou, 2003; Hornstra, Denessen, Bakker, Van den Bergh and Voeten, 2010; Wormald, 2015).

According to the survey conducted by Constantopoulou (2003) with the participation of 250 teachers in Greece, teachers were even confused about the definition of dyslexia and admitted that they were not confident about dealing with dyslexic students in their classrooms as they had never been heard of any seminars or other training programs on dyslexia in their region. With a narrower scope, Arapogianni (2003) interviewed eight secondary school teachers in the same country and reached the result that most of the teachers were not aware of the seriousness of the syndrome when it comes to possible difficulties it would cause dyslexic students to face during their education and had never felt responsible for providing any interventions for these students. Let alone their lack of knowledge, it seems also possible to encounter teachers having negative attitudes towards dyslexia as Hornstra et al. (2010) revealed in their study. Their analyses of the

data collected through interviews with a group of 30 teachers and observations in their classrooms demonstrated that some of the teachers regarded their dyslexic students as lazy because of their lack of participations in classroom activities and low scores in exams. Still, according to the researchers, it was due to the teachers' lack of awareness and misconceptions about the syndrome. In the same manner, Wormald (2015) also pointed out that the false facts teachers know about dyslexics lead them to assume that their students are unintelligent and that is why they have low performance during lessons.

All these issues regarding teachers' lack of knowledge and misconceptions about dyslexia have their echoes in classrooms, which do not seem to be of much help to either dyslexic students or the teachers themselves. Literature highlighted that what dyslexic students need from their teachers is differentiation (Crombie, 1997; Reid, 2009; Wearmouth, Solar, and Reid, 2003). Considering inclusive classes, it was propounded that their teachers should not regard them as they are under equal conditions with their peers because they are not. Dyslexics are in need of extra time, further clarifications, simplified instructions, guides, additional practices, and tolerance at times, and if their teachers are not even aware of these expectations, the learning process of the students might get damaged with the occurrence of low self-esteem, lack of motivation and interest, humiliation, alienation, limited or no participation in activities, low exam scores and many more (Gibson and Kendall, 2010; Kenny, McNeeba, Shevlin and Daly, 2000; Townend and Turner, 2002). Not being aware of the fact that they have dyslexic students in their classrooms or how to implement different methods and strategies to make their learning process easier, witnessing the struggles of their dyslexics throughout lessons might also affect teachers negatively, cause them to misevaluate the students, and even lose their self-confidence by assuming that they are not capable of teaching students with learning differences (Gibson and Kendall, 2010). Yet, Nijakowska (2014) suggested that what teachers need at this point is to find ways to participate in in-service teacher training programs to develop their self-efficacy. According to the implications of her study (2014), up-to-date in-service teacher training services seemed promising since it was revealed that they had a positive effect on teachers' awareness of and attitudes towards dyslexia and the provision of more suitable materials and teaching techniques for their dyslexic students. A further suggestion was provided by Tosun et al. (2021), measuring the knowledge and perceptions of Turkish primary school teachers

about dyslexia in the following years. Based upon the results of their study, the scholars came up with the implication that courses about the syndrome pre-service teachers take in university might enable them to be more attentive to students with specific learning difficulties and more equipped with teaching strategies suitable for the students' learning needs.

2.8. Dyslexia in the Turkish education system

Dyslexia in the context of Türkiye is a scope that is rarely focused on in literature (Bingöl, 2003; Balci, 2019). So much so that, regarding the country-wise prevalence of dyslexia, the only available study used to be the one conducted by Bingöl (2003) in 2003 on 1129 second, third and fourth grade students in primary schools in Ankara. According to the results of the study, 2% of the children had a reading difficulty. After 16 years, Balci (2019) conducted her research on 1175 primary and secondary school students in the same setting in 2019. The results of the research demonstrated that 14.8% of the participants were detected to have symptoms of dyslexia. Taking into consideration the two pioneering studies having contributed to the related literature about how common dyslexia might be among school-age students, the approximate 10% increase in the tendency of showing symptoms of dyslexia signals that the possibility of encountering at least one dyslexic student in every classroom might be getting higher in Türkiye gradually, as well (Erkan et al., 2012).

In Türkiye, students with special needs are first subjected to medical evaluation. In medical diagnosis, the results of data obtained from the individual and psychometric measurements are used to determine the cause of the disability. With medical diagnosis, features such as whether there is insufficiency, the causes of the insufficiency, its degree, the factors causing the insufficiency, and whether it is chronic or not are determined. After the medical evaluation, educational evaluation and diagnosis are made. After completing the diagnosis and evaluation process, they are placed in appropriate educational environments.

1. In line with the general objectives and basic principles of the Turkish education system, the stages of the educational diagnosis and evaluation process in the special education services regulation, which regulates the procedures and principles to ensure

that individuals with special education needs benefit from their educational rights, are listed as follows (MoNE, 2018): Work and procedures regarding the educational evaluation and diagnosis of individuals are carried out by the special education evaluation board established in the Guidance Research Centers (GRC, or RAM in Turkish).

2. The first application regarding the educational evaluation and diagnosis of individuals is made to GRC by the school administration, the parent, or the person over 18 years of age who does not have a mental disability, by the personnel assigned by the institution with an official letter for individuals benefiting from care and accommodation services in official institutions.

3. The following issues are considered in the educational evaluation and diagnosis process:

a. Educational evaluation and diagnosis are made in a suitable environment with measurement tools appropriate to the characteristics of the individual. Work and procedures related to the educational evaluation and diagnosis of those who cannot come to GRC due to health problems are carried out in the environments where these individuals are present.

b. Individuals who are determined to need special education because of educational evaluation and diagnosis are directed to the appropriate educational environment and special education service by preparing a Special Education Evaluation Board Report. A report is prepared for students who are directed to an official special education school, special education class or full-time integrated education, and a report is prepared for students who are decided to receive supportive education in private education institutions that provide services within the scope of the Private Education Institutions Law No. 5580 dated 8/2/2007.

c. A maximum one-year education plan is prepared for students who are decided to receive support education in institutions providing services within the scope of the Private Education Institutions Law. Expired plans can be renewed if necessary.

d. Work and transactions regarding educational evaluation and diagnosis services are carried out through the MEBBIS-RAM (GRC) Module.

4. Educational evaluation and diagnosis procedures are carried out by the GRC in the region where the school is located for students enrolled in a school, and by the GRC in the region where the residence address or institution where they benefit from care and accommodation services is located, for those who are not enrolled in any school.

5. Educational evaluation and diagnosis are made during transitions in all types and levels of education by evaluating the individual's characteristics in all areas of development, their competencies in academic disciplines and their educational needs. In addition, it is repeated, when necessary, upon the written request of the parent or school, in line with the educational performance and educational needs of the individuals.

6. Educational evaluation and diagnosis services are provided at GRCs in Türkiye to individuals with special educational needs who continue their education in Turkish schools abroad affiliated with the MoNE.

7. Foreign nationals who continue or will continue their education in Türkiye benefit from the educational evaluation and diagnosis services offered at GRCs. A Special Education Evaluation Board Report is prepared for those individuals who are determined to need special education because of educational evaluation and diagnosis.

8. Work and procedures regarding the educational evaluation and diagnosis of students nominated to BİLSEM (Science and Art Center) as special talents are carried out in line with the calendar announced in the guide published by MoNE.

9. The opinion of the individual or the parent is considered in the work and procedures to be carried out regarding the educational evaluation and diagnosis process (MEB, 2018).

According to the MoNE (MEB, 2018), GRCs are responsible for the educational diagnosis and evaluation process after the medical evaluation of students with specific learning differences (SpLDs). At the end of the tests and evaluation processes applied by GRCs, placements are made through the Special Education Services Board. It is known that the school and classroom environment of the student and the views of the family are effective during the placement phase. It is generally known that students with SpLDs are placed in their own classes within inclusive practices.

As a result of the evaluation made in GRCs, it is decided whether the student will receive support education or not according to the decision of the Educational Evaluation Board. Students who are deemed appropriate to receive support education can take individual lessons for up to 8 hours per month at their own school or Rehabilitation Centers, in addition to school lessons. In rehabilitation centers, students are provided with education according to the Specific Learning Disability Module, which was developed by MoNE (MEB, 2014).

Providing students with special needs with the necessary support systems inside and outside the classroom and educating them with their peers is called inclusion (Sarı et al., 2020). In Türkiye, students with specific learning differences are placed in a classroom deemed appropriate by the Special Education Services Board (MEB, 2014), and start taking lessons with their peers there. Yet, unlike their peers, an Individualized Education Program (IEP) is prepared for these students (MEB, 2018). This program also has educational objectives that are according to the students' interests and needs. Teachers are obliged to take IEP into consideration in the education and evaluation of these students (2018).

2.9. Dyslexia in EFL (English as a foreign language) education

With the estimation of having at least one dyslexic student in every classroom (Erkan et al., 2012; Krzyzak, 2006; Nijakowska, 2014; Stein, 2001), dyslexia has become a syndrome that EFL teachers should also be aware of in order to provide the optimum target language education for each student equally. Just like the way dyslexic students have difficulty in processing information and reading in their mother tongue, their situation keeps its presence while learning additional languages, as well (Kormos, 2017). Especially in the latter process, the difficulty broadens its scope from phonological awareness, reading comprehension, and spelling to vocabulary acquisition and the development of literacy skills (Kormos and Smith, 2012).

Looking at the scope of the difficulty they face in their target language learning process more closely, it could be addressed that dyslexia affects the whole process from different aspects (Nijakowska, 2014). Accordingly, as their level of phonological processing is lower than their peers, it is difficult for the dyslexic students to distinguish the sounds of their target language, which is even harder for them if there are some that are not a part of their native one (Eide and Eide, 2023). Not being familiar with these sounds, it takes longer for the dyslexic students to succeed in tasks including the acts of spelling and repeating, whether what is expected from them to do is at a sound or a sentence level (2023). As English is a language that is not pronounced as written (Peterson, 2020), it might be extra hard for dyslexic students to get used to its nature (Fekih, 2019). When it is time to see the sounds in the written form, the students might feel like a lost tourist

who do not know how to read a map. They might also confuse words with each other if their pronunciations are similar (e.g., here – hear, eight – ate). Having difficulty in processing information when they are solely exposed to the spoken language, it might take longer for the dyslexic students to retrieve the words and take it to their long-term memory (Kormos, 2017). When it comes to learning grammar, the students might find it difficult to understand the abstract rules and concepts if the instruction process does not include supporters addressing more than one sense (Kamala, 2014).

Being integrated in regular classrooms, dyslexic students could improve their target language skills to beyond average level in the case of being provided with multisensory instruction and teacher support (Nijakowska, 2016). Nevertheless, that does not happen most of the time as EFL teachers do not have the opportunity to receive courses based upon dyslexia during their majors to start their careers all prepared or any in-service training to be able to update their teachings skills by having a grasp of the nature of the syndrome and being knowledgeable about EFL teaching methods suitable for the language learning needs of dyslexic students, which is also admitted by the teachers themselves (e.g., Atar et al., 2021; Stai, 2020).

Literature suggests that coming up with more customized teaching methods and learning environments for their dyslexic students is what EFL teachers should do to meet their EFL learning needs (Gustafson et al., 2007; Schneider and Crombie 2003; Wise et al. 2007). According to Kormos and Smith (2012) and Nijakowska (2016), EFL teachers should customize their teaching method in a way to instruct directly, explicitly and by using more than one sensory technique to raise the phonological awareness of their dyslexic students. Moreover, they should provide vocabulary alongside of the sounds of each phoneme by letting the students repeat and practice the input as frequently as possible through activities such as drills so that they could become automatized at differentiating and manipulating sounds by establishing a letter-sound relation and develop their spelling and reading skills in the long run (Cimermanová, 2015).

In terms of learning environments, EFL teachers should make sure that their dyslexic students are in a dyslexia-friendly classroom created with the consideration of their idiosyncratic strengths, weaknesses, and language learning needs (Reraki, 2014). A dyslexia-friendly classroom could come to life by adjusting materials, the enrichment of the visuals, font size, subtitles, the light and temperature of the classroom, pace of the in-class activities, instructions, feedback, testing and evaluation procedures, and so on

(Alnaim, 2023). If the aim is to provide an equal language education for all students, enabling the dyslexic ones to feel seen and understood should be one part of it for the EFL teachers, who should also be supported by educational policymakers through the provision of related in-service trainings with more broadened scopes (Nijakowska, 2010).

2.10. EFL teaching policies in the Turkish education system

In Türkiye, the education system is in responsibility of the Ministry of National Education (MoNE). Hence, it arranges the financing of all the state schools, appointment of teachers, and the provision of a sole shared curriculum along with course books and materials. That being the case, Türkiye has ranked as one of the countries having the most nonautonomous schools according to the research of Organisation for Economic Co-operation and Development (OECD) on the participants of PISA (Programme for International Student Assessment) in 2012 (2013). As a side note, PISA could be defined as an international test of OECD measuring the skills of 15-year-old students from 65 countries in three major areas, namely, reading, mathematics, and science once in three years with the aim of assessing the education systems of the participants (OECD, 2013).

By virtue of the curriculum renewed in 2018 (MEB, 2018), teaching English in schools starts from the second grade and continues uninterruptedly until the end of the twelfth grade. The related lessons are two hours a week in the second, third and fourth grades of primary school. On the other hand, lesson hours are three hours per week in the fifth and sixth grades and four hours per week in the seventh and eighth grades. In addition, high school and high school elective foreign language courses and English courses, which are normally given four hours a week in these classes, may exceed their standard hours with the mentioned elective courses. In the light of these, it could be figured that students who start learning English in the second grade takes a total of 1,368 hours of English lessons when they graduate from the twelfth grade (2018).

Taking into consideration the sections of the curriculum covering second, third and fourth grades studying in primary schools as a sample, the policies and objectives could be summarized as follows (MEB, 2018):

1. A process-oriented education/training to raise multilingual individuals

2. Transition to student and learning-centered approaches
3. Learning to learn
4. Developing the ability to use language correctly and appropriately
5. Mixed approach
6. Implementing the European Language Passport
7. Ensuring realistic use of language by focusing on the communicative method
8. Developing critical thinking skills
9. Increasing the social skills necessary for collaborative and supportive work.

It could be regarded that the curriculum is equivalent to the foreign language teaching policies and practices prescribed in Common European Framework of Reference for Languages (CEFR) by the Council of Europe (2001). However, in contrast to the total duration of English lessons taken within an 11-year of period and the policies and objectives of the sample primary school curriculum arranged by MoNE, Türkiye ends up in the 66th row as one of the low-proficient countries among a total of 113 in 2023 according to the EF English Proficiency Index, a survey report developed by EFL Education First (2023). Considering the result, it could be indicated that the EFL teaching policies in the country might not have matched the delivery of the curriculum in real classroom settings or the target language learning needs of students yet.

In the English course curriculum, which has been implemented by the Ministry of Education since the academic year 2018-2019, it is emphasized that students' individual differences and various learning styles should be considered and an eclectic model based on communication that will increase in-class interaction should be adopted (MEB, 2018). Rather than being shaped around a single teaching method, this program has been designed considering an action-oriented approach based on current studies in education and international teaching standards, taking into account the three key concepts of the CEFR, which include student autonomy, self-assessment, and cultural diversity. In this way, students are expected to grow up to be self-confident and proficient English speakers who appreciate their own culture, while learning to understand and value a wide range of international languages and cultures in accordance with the CEFR (2018).

While preparing the English course curriculum, the themes in each unit were chosen among topics that students in this age group are familiar with, such as family, friends,

animals, holidays, and leisure activities, to establish a connection between language learning and daily life. In addition, considering CEFR's emphasis on improving intercultural competence and respect for cultural diversity, it seems that cultural problems are also at the forefront. While both the culture of the target language and elements of international culture are presented in a non-threatening manner appropriate to the theme of each unit, it is also stated that the values of Türkiye's own culture are emphasized to prevent the formation of negative attitudes. From an intercultural perspective, such emphases might be considered as useful due to the lingua franca status of the English language. By the nature of English being the medium of international communication, its non-native speakers exceed the native ones, which implies that it is more likely to be exposed to a variety of different accents and cultures of English than solely the British and the American ones being its native speakers (Alptekin, 2002). Emphasizing the exceeding number of non-native speakers of English with the term "World Englishes", Kachru (1985) asserts that English should not be considered under one standardized accent or culture. On a similar line, Alptekin (2002) intensifies the argument by highlighting that constructing the learning process of an international language upon standardized native speaker norms would be utopian, unrealistic, and constraining. For these reasons, what is expected from policy makers and textbook designers to reflect this reality into language teaching procedures so that students could have the minimum risk of having communication breakdowns when they go out of their classroom and have any opportunities to use their target language in the wild. However, studies evaluating English textbooks being used in Turkish public schools from sociolinguistic perspectives reveal that such expectations have not been met yet (e.g., Atar and Erdem, 2020; Genç and Meral, 2020; Çakır, 2021; Çakır, 2021).

Accordingly, Atar and Erdem (2020) developed a checklist for the evaluation of English textbooks built upon the intercultural awareness and with the consideration of sociolinguistic issues and used it for the evaluation of one that is for the 9th graders. As a result of the evaluation process, the scholars found out that the textbook promoted intercultural awareness through pictures. However, when it came to audio recordings provided in the book, the accents were all based upon the standard accent of English. Moreover, it was also unveiled in their study that the related textbook mostly gave place to the Turkish and English cultures and ignored the rest of the world who are also likely to be the interlocutors of the users of the textbook in the future. In the same vein, using

the same checklist for the evaluation of an 11th grade textbook, Genç and Meral (2020) came up with the conclusion that high school students in Türkiye were not provided with adequate instances of the varieties of English. Unfortunately, the result was not divergent in the primary and secondary school contexts, either. Both Çakır (2021) evaluating third grade English textbook and Çakır (2021) evaluating an eighth grade English textbook concluded that textbooks in Türkiye overlooked the presence and importance of varieties of English and other cultures and mainly promoted the local and standardized norms. Based upon those results, the common implication in the related studies could be specified as the need for raise in intercultural awareness in the textbooks in all grades to better prepare the Turkish EFL students for the real-life uses of their target language.

Apart from those, the design of integrated resources is encouraged to facilitate teachers' selection of learning materials with appropriate activities and adaptation to various contexts according to school type, sociocultural structure, and economic situation (MEB, 2018). Taking into consideration all these, it could be recapitulated that certain themes such as intercultural awareness, respect for different cultures, embracing one's own culture and sensitivity to individual differences are emphasized in the English course curriculum for primary schools (2018). Besides, it was realized that students receiving education in various types of schools, sociocultural structures and economic situations are also considered in this process (Özen and Dağyar, 2020). However, what was also noticed was the insufficient involvement of other cultures in the textbooks developed within the scope of the related curriculum (Atar and Erdem, 2020; Genç and Meral, 2020; Çakır, 2021; Çakır, 2021; Kula and Özasan, 2023).

In Türkiye, textbooks prepared for formal and non-formal education institutions affiliated to MoNE are provided by the ministry itself. The textbooks have commenced to be distributed free of charge to students by the government since the 2003-2004 academic year (MEB, 2020). According to the Ministry of National Education Textbooks and Educational Tools Regulation published in the Official Gazette No. 31628 dated October 14, 2021, on the purpose of regulating all procedures and principles to be included in textbooks (MEB, 2021), the visuals in the textbooks should be prepared in terms of design and content to support learning and by considering the developmental characteristics of the students. The visuals and texts in the textbooks directly or indirectly convey the cultural values and social norms of the country to the students. It

has been accepted in the mainstream literature in the field of education (e.g., Holmqvist Olander et al. 2014; Omaggio, 1979; Purwaningtyas, 2020; Soleimani and Khah, 2014) that the visuals used in textbooks have an effective role on students. For that reason, it could be uttered that the place dyslexia and dyslexic individuals have in the school textbooks have utmost importance for the role of students with dyslexia in the society and the efficiency of their target language learning process since these might affect both their social acceptance and the way their learning needs are met (Purwaningtyas, 2020).

Consisting of the first, second, third, and fourth grades, the primary school level of education system in Türkiye commences the provision of the English language education starting from the second grade. The current Primary School English Course Curriculum was updated with the decision numbered 15 and dated 19/01/2018 of the Board of Education and Discipline (MEB, 2018). Following the update, the English textbook provided for the second graders, namely, Primary School English Textbook 2 has been accepted as the main textbook for five years, starting from the 2018 – 2019 academic year, with the decision numbered 78 and dated 28.05.2018 of the Ministry of National Education, Board of Education and Discipline (MEB, 2018). Just Fun English, The English textbook provided for the third graders, on the other hand, has been accepted as a textbook for five years, starting from the 2019 – 2020 academic year, by the decision of the Board of Education and Discipline of the Ministry of National Education dated 25.07.2018 and numbered 99 (MEB, 2018). As for the English textbook provided for the fourth graders, namely, Primary School English Textbook 4 has been accepted as a textbook for five years, starting from the 2019 – 2020 academic year, by the decision of the Board of Education and Discipline of the Ministry of National Education dated 18.04.2019 and numbered 8 (MEB, 2018). Further information about the publishing houses, publishing dates, number of pages, and authors of the related textbooks are presented in Table 1.

Table 1.

The Primary School English Textbooks

Grade	Title of the Textbook	Publishing House	Publishing Date	Number of Pages	Author
2 nd	Primary School English Textbook 2	Bilim ve Kültür Publishing	2019	176	Ferahnaz Tan
3 rd	Just Fun English	Tutku Publishing	2019	222	Baykal Tıraş
4 th	Primary School English Textbook 4	FCM Publishing	2019	192	Ferahnaz Tan

There are a total of 10 units in primary school English textbooks, and each book includes 10 different themes and topics. The second and fourth-grade books contain exercises for repetition after the fifth and tenth units. These exercises are intended to repeat the previous five units and are mostly related to reading and writing skills. According to the curriculum, the basic language skills that should be taken in primary school are listening and speaking. It is stated in the curriculum that reading and writing skills should not be taken as a basis but should be activated at a very limited level (only on a word basis) in later stages (from the third grade onwards). In addition, it is seen that most of the activities are based upon listening and speaking skills, and the ones for reading and writing skills increase at a rate that is suitable for the mainstream students in the following levels. However, as they could still be challenging for dyslexic students, a compensation with further supportive visuals and audio recordings might be helpful for them so that the students could better understand the target words in the activities by connecting them with certain contexts (Bacon and Handley, 2010)

Examining the textbooks in terms of reading and writing skills, which are the ones dyslexic students have difficulty in mostly, the second-grade English textbook includes approximately 20 exercises in one unit, and around four of them include reading skills with words provided alongside of visuals although the main foci of the related activities are listening skills. Like reading, writing skills are not among the basic skills that need to be developed at this stage, either. However, it is stated in the curriculum that it could

be included on a word basis and at a very simple level. When the textbook is examined, there are a few exercises that address writing skills among the average of 20 exercises in each unit. However, starting from the first unit, there are fill-in-the-blank activities in some themes that are not appropriate for the level of the second graders, whose literacy skills have not yet developed. On the top of that, the English alphabet is not yet among the topics covered, either.

The third-grade English textbook has around three activities based upon reading skills among the 30 exercises in each unit. Most of these are word-based, in accordance with the unit theme, and are supported by appropriate pictures, which is also supportive for dyslexic students. Among the 30 activities in each unit in the textbook, one or two exercises based upon writing skills are included, while some units do not include any at all, which is also suitable for this grade. On the other hand, it is also observed that writing exercises are provided by integrating them with other skills in the third-grade textbook. For instance, there are exercises such as “Listen and write”, which activates not only writing skills but also listening skills. However, such integrated activities are not included in the second and fourth-grade textbooks, which is unfortunate especially for the fourth graders since integrated activities and drills enabling students to practice newly introduced target language content repetitively might be effective for students to get more autonomous in their target language. Nevertheless, to comment on the case from the viewpoint of dyslexic students, they might also need visuals to support the abstract input to be able to produce it also in a written form.

To examine the fourth-grade English textbook from the aspect of reading and writing skills, it is realized that the activities gradually increase from word to sentence and even dialogue level, unlike the previous grades. Even though reading skills are still not among the basic skills that should be taught in the fourth grade, including such activities at an increasing level compared to previous grades could be regarded as appropriate for the age group. However, dyslexic students might have difficulty in completing such activities in time. That is why, their EFL teachers should tolerate them and even provide them with further visuals when needed. As for the content focusing on writing skills, it could be stated that the fourth-grade English textbook include approximately three related activities in each unit, and they are at a word or simple sentence level. What should be criticized here is that the activities are not integrated with other skills although it could have been more effective for students if they had had the chance to listen to the

words before writing. It could have also been clearer for dyslexic students if they had been provided with supportive visuals.

Considering all three textbooks provided for the second, third, and fourth graders in the Turkish education system, it could be stated that they are mostly based on listening and speaking skills, which comply with the primary school curriculum. As the grade level increases, the number of activities including reading and writing skills also increase and they are mostly supported by visuals. As Atar (2021), evaluating all these related textbooks alongside of two more by focusing on the sequence of morphosyntactic structures in them, also points out, the textbooks seem to comply each other from the 2nd to the 4th grade and build a meaningful construction in a hierarchic way when considered their linguistic aims and objectives, which could be regarded as their plus point. However, when it comes to the minus point, it seems that no specific attention is given for students with specific learning needs. Hence, it could be suggested that activities focusing on the practice of reading and writing skills should frequently be supported by examples with visuals and audio recordings so that they could better make sense of what they are expected to do and can practice their target language by completing their tasks successfully (Razak, 2019).

2.11. Dyslexia in the English language teacher education in Türkiye

In Türkiye, the English Language Teaching (ELT) Department taking place in the education faculties of 62 state and 15 foundation universities (YÖK, 2023), recruits its students by means of a three-step national university entrance exam (YKS) that Student Selection and Placement Centre (OSYM) organizes. In the first step, students sit for the Basic Proficiency Test (TYT), consisting of 120 multiple-choice questions on nine different subjects (i.e., Basic Mathematics, Basic Turkish, Physics, Chemistry, Biology, Religious Culture and Ethics, Philosophy, History, and Geography), usually on a Saturday in the second half of June. In the following morning, students take the Field Proficiency Tests (AYT), comprising of four different tests on four different subject areas (i.e., Literature, Social Sciences, Mathematics, Science) with a total of 160 multiple-choice questions. In the afternoon, the Foreign Language Test (YDT), including 80 multiple-choice questions on a selected language out of English, Russian,

French, German and Arabic, is held with the aim of measuring students' grammar, vocabulary and reading knowledge. While the Basic Proficiency Test score contributes to the 40% of the total result, the remaining 60% is added by the scores obtained from the Field Proficiency Tests and the Foreign Language Test. Being a multiple-choice test without any attention directed to the assessment of the basic four skills other than reading (i.e., listening, speaking, and writing), the Foreign Language Test does not provide students with the chance to improve them although all these four skills are going to be used during the departmental courses, which might cause them to face challenges while trying to meet the objectives when they get into the universities (Gunes, 2019).

Getting into the universities, what student teachers are expected to do firstly is to pass the preparatory class by receiving the passing score in either the language proficiency tests provided by the universities or national or international exams, namely, Foreign Language Exam (YDS), Foreign Language Exams for Higher Education Institutions (YÖKDİL), and Test of English as a Foreign Language (TOEFL). In the case of not meeting such a criterion, the student teachers are expected to take a one-year preparatory class, consisting of courses on the development of the four basic skills. Following the preparatory class, the four-year ELT program predominantly offers theoretical courses based upon linguistic and pedagogic competencies in the first two years. When it comes to the last two years, the program tends to provide student teachers with opportunities to practice teaching through micro and macro teaching sessions as a part of courses such as Teaching English to Young Learners, Teaching Reading and Writing Skills, Teaching Listening and Speaking Skills, etc. and also in teaching practicum. In addition, the student teachers also take community service and second foreign language courses during this period. Apart from these, the Special Education course also takes place at the second half of the ELT program as a general elective course (Atar et al., 2021); however, dyslexia is included only conceptually as a part of specific learning differences, being the umbrella term (Çakıroğlu, 2016). Other than that, unfortunately, no specific attention is given in the related program for preparing the teacher candidates for teaching students with special needs (Atar et al., 2021).

Passing all the required courses and completing a total of 240 credits throughout the four-year program, student teachers qualify for the bachelor's degree acknowledging their competence of teaching English as a foreign language. From their senior year on, the pre-service teachers become eligible to take the Examination for the Selection and

Placement of Candidates for Professional Posts in Public Organizations (KPSS), which is the exam the teacher candidates are expected to receive a high score to be assigned as teachers by the Ministry of National Education (MoNE) at a state school in Türkiye (MEB, 2017). Consisting of multiple-choice questions specifically on social sciences, linguistic knowledge, pedagogical knowledge, subject matter knowledge, KPSS is followed by a further 10-minute interview that might include questions on education, technology, etc. Based upon the results of the interview, MoNE might assign the teacher candidates as contracted teachers at state schools in a disadvantaged region of Türkiye for the first four-year of their career. In their fifth year, the in-service teachers could be assigned in a different state school in a different region of the country based on their request.

On the other hand, faculties of education in Türkiye also provide Pedagogical Formation Training Certificate Programs for a fee for students graduating from the departments of English Language and Literature, American Culture and Literature, Translation, and Interpreting (English), Linguistics, Science of Translation (English), and English Language and Culture. Taking place for one academic year, such certificate programs include theory-based pedagogical courses and teaching practicum. Following these programs, the certificate takers also become eligible for recruitment by joining the graduates of the four-year ELT departments.

2.12. EFL teachers' knowledge of dyslexia

Since English has been accepted and used as a common medium of communication for around forty years (Kachru, 1985), there still are a considerable number of students learning it as a second or foreign language. Among them, there might also be thousands of dyslexic students who need being heard by their language teachers regarding the difficulties they face while learning English and what kind of assistance they require in language classroom to reach their target language learning goals as successfully as their peers but may not have been supported yet (Indrarathne, 2019). Even though dyslexia is of the most common learning difficulties, language teachers are not as knowledgeable about the syndrome as they are supposed to be (Hayes, 2000, as cited in Kalsoom et al., 2020). When it comes to EFL teachers, like the previously discussed studies on general

education teachers, it seems that their awareness of dyslexia is either limited or composed of misunderstandings (Fekih, 2019; Indrarathne, 2019; Nushi and Eshraghi, 2023; Tobbi, 2020).

One of the studies emphasizing EFL teachers' knowledge of dyslexia was conducted by Nushi and Eshraghi (2023) with the aim of revealing to what extent the EFL teachers were aware of the syndrome in the context of Iran. Adopting the Knowledge and Beliefs about Developmental Dyslexia Scale developed by Soriano-Ferrer and Echegaray-Bengao (2014), the scholars collected the data from 84 Iranian EFL teachers working at different language schools. As a result of the study, it was found out that most of the participants did not have adequate knowledge of dyslexia. However, what was promising in the results is that the EFL teachers expressed their willingness to learn more about the syndrome, what exactly dyslexic individuals experience in a classroom setting, and what to do to be more helpful for them in classroom settings. Upon that, Nushi, and Eshraghi (2023) suggested well-organized intervention programs for the EFL teachers so that they could be more aware of the condition of their students and offer them more appropriate and effective education. Furthermore, the scholars also recommended that teacher training curricula, instructional policies, and teaching materials should be revised and improved accordingly.

Conducting survey research with 81 participants, Tobbi (2020) aimed to investigate the extent to which EFL middle school teachers in Algeria were knowledgeable of dyslexia by asserting that the incident of dyslexia was more prevalent at lower grades. In that respect, the scholar collected the data through an online survey. Accordingly, the results of the study revealed the participants' lack of knowledge regarding dyslexia and its effects on dyslexic students. The researcher pointed out that what the Algerian teachers were mostly aware of was the way they could not do anything even though they would notice the dyslexic students' different educational needs and that a training on how to teach English in a classroom including dyslexic students would be beneficial for both sides. Besides, it was also disclosed in the study that there were a considerable number of the teachers wrongly assuming that their dyslexic students were in tendency to perform inadequately in the classroom due to their laziness. In the light of those, the researcher suggested that in-service teacher training should be provided by the government and all EFL middle school teachers must attend so as not to continue their

career with misconceptions and cause dyslexic EFL students to lose the motivation to learn their target language.

In the same context, Fekih (2019) also conducted survey research with the aim of finding out how aware EFL middle school teachers in Algeria of dyslexia, but he collected the data from 42 Algerian EFL teachers through an online survey and a semi-structured interview with two focus groups. As a result of the study, the scholar reached the conclusion that the majority of the EFL teachers had inadequate or no knowledge of dyslexia. Accordingly, the participants mostly mistook dyslexia with other learning differences and misconceived their dyslexic students as individuals who were devoid of any learning abilities and suspected their intelligence. However, all were because of their non-existing knowledge about the syndrome. Upon the results, the researcher suggested that EFL teachers should be designated to compulsory in-service training programs that would raise their awareness about dyslexia and the other SpLDs and open up their horizons about how much knowing and meeting the educational needs of students with SpLDs could change the trajectory of their academic lives in a positive way.

Nevertheless, estimating that one out of ten students in schools were dyslexic, Indrarathne (2019) aimed to investigate EFL teacher trainers' attitude towards dyslexia and challenges they encountered while teaching dyslexic students in Sri Lanka. Accordingly, the researcher organized three different workshops and collected data from 129 primary and secondary school EFL teachers through a survey and an interview after three months. According to the results of the study, it was found out that most of the participants were unaware of the characteristics of students with dyslexia and whether they had different educational needs in an inclusive classroom. Based upon the results, the researcher emphasized the lack of content in the courses of teacher education programs regarding dyslexia and suggested that the EFL teachers lack knowledge could be enhanced by means of in-service teacher training programs. The researcher also indicated that those training programs should be feasible in a way to inform the EFL teachers about the symptoms of dyslexia so that they could identify if a student was dyslexic and different teaching techniques to use for dyslexic students with different educational needs so that they could be of help for the sustainability of the academic lives of their possible dyslexic students in the future.

As it is not easy for dyslexic students to deal with written texts at a quick pace or without making any mistakes and to perform successfully in exams due to their short-term memory, attention deficit, and problem in developing automatizing skills (Cimermanová, 2015; Kormos and Smith, 2012; Kormos, 2017; Lama, 2019; Nijakowska, 2010; Schneider and Crombie, 2003), it was considered in the literature that it might cause dyslexics to fall behind the in-class activities when their EFL teachers are not ready to implement suitable techniques to minimize the risk of inequality in their students' EFL learning process (Fekih, 2019; Lama, 2019; Tobbi, 2020). From another aspect, Kormos (2017) supported the assertions regarding the condition dyslexic students are under while learning EFL with the statement that processing language itself was what dyslexics specifically found challenging; therefore, learning a foreign language meant doubling the already experienced hardships for them. However, in the case of having limited or wrong information about the negative impacts of the syndrome on their dyslexic students, it might not be expected from EFL teachers to be ready to differentiate and tolerate them in the way they need. Rather, what is more likely to be encountered in EFL classrooms would be ongoing challenges faced by both dyslexics and their EFL teachers as Fekih (2019) brought forth in his work.

There have been a variety of findings in the literature regarding challenges frequently encountered by dyslexic students in language classrooms such as difficulties in comprehending the grammatical rules of English, identifying or differentiating phonological items (Crombie, 1997; Ganschow and Sparks, 2000), concentrating (Lemperou et al., 2011), reading words or sentences aloud (Kryzak, 2007), spelling (Lemperou et al., 2011; Lama, 2019), memorizing and vocabulary learning (Lama, 2019), writing (Ganschow and Sparks, 2000; Kryzak, 2007), performing tasks and finding a reason to try harder (Kormos et al., 2009), feeling involved in the classroom (Erkan et al., 2012), being sure of their potential (Nijakowska, 2010) and so on. In the light of all those, Indrarathne (2019), Lemperou et al. (2011), Nyikes (2019), Ranaldi (2003), and Rontou (2012) declared that both EFL teachers and dyslexic EFL learners had challenges in their own ways but it, indeed, could be possible for EFL teachers to take the first step by searching for ways to compensate for the deficits of both their dyslexic students in their EFL learning process and themselves in the process of adjusting their teaching techniques and strategies in a way to make the dyslexic students

find their learning strengths and use them efficiently with the help of governments, if they would also do their share and provide in-service training services for EFL teachers.

2.12.1. Turkish EFL teachers' knowledge of dyslexia

In the context of Türkiye, in which the rate of the special needs population is 12.29% (Erkan et al., 2012), it was seen that dyslexia has been of concern in the field of education. Among them, studies on the awareness of general education teachers regarding dyslexia and dyslexic students has rare examples (e.g., Aktan, 2020; Balci, 2019; Basar and Goncu, 2018; Tosun et al., 2021), and they were resulted with the implication that EFL teachers in Türkiye did not have adequate knowledge about dyslexia and how to teach dyslexic students; therefore, MoNE should provide in-service training services for them to broaden their horizons on this matter and sufficient sources so that the teachers can help their dyslexic students overcome their difficulties throughout their education as much as possible. As for the EFL context, only two studies were found related (Akbasli et al., 2017; Erkan et al., 2012).

In the study of Akbasli et al. (2017), a model regarding strategies to cope with dyslexia in EFL classrooms was propounded while what Erkan et al. (2012) conducted was a case study focusing on the effect of motivational teaching strategies on the development of a dyslexic EFL student in the process of learning how to introduce himself in his foreign language with the help of private lessons taking place for six weeks. The researchers also came up with the suggestion that the Turkish government should guide and support teachers to make them assist their students in the process of coping with their foreign language learning difficulties. Moreover, they proposed that dyslexic students should be enabled to feel that they are supported and trusted and that can be made possible with the collaboration of specialists and EFL teachers.

As seen in the related literature, the number of the studies focusing on dyslexia in the context of EFL classrooms in Türkiye is only few. On the top of that, to the best of the researcher's knowledge, no research on Turkish primary school EFL teachers' knowledge of dyslexia could be found. For that reason, the current research is considered to contribute to the field through its findings and insights in the local context.

CHAPTER III

3. METHODOLOGY

This chapter presents the methodological design and procedures of this study. Table 2 introduces the methodology of the present research by summarizing the research questions, how they were sought, and how the collected data were analyzed under a single framework. Accordingly, it could be explained that the first research question and its sub-questions were sought through The Knowledge and Beliefs about Developmental Dyslexia Scale (See Appendix A) adopted by Soriano-Ferrer and Echegaray-Bengoa (2014) and five interview questions (See Appendix B) and analyzed via Descriptive Analysis. As for the second research question and its sub-questions, they were sought through the sixth and seventh interview questions, while their analyses were made via Content Analysis. Details regarding the data analyses and data collection tools can be found in section 3.3. and 3.4.

Table 2.

The Methodology

Research Questions	Data Analysis	Related Questions in the Data Collection Tools
1. To what extent are Turkish primary school EFL teachers aware of dyslexia?	Descriptive Analysis	All the 36 items in The Knowledge and Beliefs about Developmental Dyslexia Scale (See Appendix A) adopted by Soriano-Ferrer and Echegaray-Bengoa (2014)
1.1. To what extent do Turkish primary school EFL teachers know dyslexia?		Interview Question 1: What is dyslexia? Could you please talk about the characteristics of a dyslexic individual?
1.2. To what extent do Turkish primary school EFL teachers lack knowledge of dyslexia?		Interview Question 2: How do you know/detect that there is a dyslexic student in your class?
1.3. To what extent do Turkish primary school EFL teachers have misconceptions about dyslexia?		Interview Question 3: Have you ever had a dyslexic student? If yes, have you encountered any difficulties in the process of teaching English to your student?
		Interview Question 4: What teaching methods do/would you apply to your dyslexic student?
		Interview Question 5: Did you take a course on dyslexia during your bachelor's degree program?

2. According to the views of Turkish primary school EFL teachers:	Inductive Content Analysis	Interview Question 6: Have you ever been provided any in-service training on dyslexia throughout your teaching career?
2.1. Are they provided any in-service training on dyslexia?		
2.2. What kind of policies should be followed in the Turkish education system to facilitate EFL education for both teachers and dyslexic students?		Interview Question 7.1: In your opinion, what kind of policies should be followed in the education system to facilitate foreign language education for both teachers and dyslexic students?
2.3. What kind of support should school administrations provide to facilitate EFL education for both teachers and dyslexic students?		Interview Question 7.2: What kind of support should the school administration provide to facilitate foreign language education for both EFL teachers and dyslexic students?

3.1. Research design

The present research was built upon a mixed-method design since not only quantitative but also qualitative data collection procedures were undertaken. According to Johnson et al. (2007) as the mixed-method research design involves one or a group of researchers integrating aspects of both qualitative and quantitative approaches. This includes combining qualitative and quantitative perspectives, methods of data collection, analysis, and inference techniques. The goal is to achieve a comprehensive and detailed understanding and to validate the findings. Being in the same vein as the scholar, Creswell and Clark (2007) suggest that mixed-method research is an approach that involves gathering, analyzing, and integrating both quantitative and qualitative methods within a single study or across multiple studies to gain a deeper understanding of a research problem. Leech and Onwuegbuzie (2009) dig deeper into the research design and highlight that the process of conducting mixed-method research comprises of collecting, analysing, and interpreting the quantitative and qualitative data under a sole or multiple investigations focusing on a specific phenomenon.

Functioning as a bridge by enabling two different approaches of research to team up (Dörnyei, 2007), mixed-method research necessitates the researcher to assemble two different means of data collection and shape their strengths into one common core that would facilitate the contribution of clearer insights (Creswell, 2012). To tackle each of the means, quantitative data collection provides objective statistics from a large population in a short amount of time and surveys could be of examples for the tools under the category of the related data collection type (Carr, 1994; Payne and Payne,

2004). As for the opposite end of the pole, qualitative data collection is the one letting the researcher question a phenomenon that requires explanation beyond numbers and obtain more holistic and detailed results from several perspectives at the end of the process (Bachman, 1998; Denzin and Lincoln, 2002). According to Creswell and Garrett (2008), a mixed-method research design is used in the case of making an investigation, the questions of which could not be sufficiently answered through only one medium of data collection. The scholars also added that such a research design is more advantageous in terms of obtaining broader insights in the field of education (2008). At this point, it could be speculated that EFL teachers' level of dyslexia awareness might be measured through only a quantitative data collection tool; however, the reason(s) behind their beliefs, knowledge, misconceptions about the syndrome as well as their suggestions upon necessary adjustments to be made in the EFL education system of Türkiye in support of dyslexic students and EFL teachers would need a deeper questioning to be able to reach solid explanations at the end of the research.

As the current research first measures the extent of awareness that the participants have regarding dyslexia through a scale, and then, gets to the bottom of the points the participants do not have a solid grasp of regarding dyslexia with the need of further explanation and suggestions, it could be described as explanatory in nature. Seeking for explanations for the 'why' and 'how' questions with an eye on the disclosure of rarely explored topics (Babbie, 1990; Bhattacharjee, 2012; Grey, 2009), an explanatory sequential research design adds up to the act of studying a certain phenomenon in cooperation with its causes and effects (Yin, 1993). According to Mehrani (2015) who is in the same line as the scholars, this design is initially comprised of collecting and analyzing quantitative data, followed by the collection and analysis of qualitative ones.

In the present research, the aim was to measure EFL teachers' beliefs and knowledge about dyslexia, gain a deeper understanding of the reasons behind their misconceptions and lack of awareness, and come up with suggestions upon how EFL education should be facilitated for dyslexic students and their EFL teachers. Based upon the related aims, both quantitative and qualitative data were collected through a scale and a structured interview, and their results were analyzed, synthesized, and discussed with a holistic view in the following chapters.

3.2. The sample and setting

In the process of reaching the participants of the research, the snowball sampling method, which could be defined as a non-probability method of sampling taking place with the possible participants of the research further requesting their acquaintances meeting the sample criteria to be its future participants (Johnson, 2014), was implemented. The aim here was to engage a large number of participants in cities with a substantial number of primary schools. Therefore, five neighbouring cities in the Marmara Region, namely, Balıkesir, Bursa, İstanbul, Kocaeli, Sakarya were selected. As it would take a lot of time for the current research to be completed if the researcher had visited every primary state school in each of the five cities to collect the data, the quantitative data collection tool had been prepared as an online document on Google Form instead. As the name suggests, the snowball sampling process took place via contacting with the researcher's acquaintances who were school administrators and teacher colleagues. What they were supposed to do was also to contact with their EFL teacher acquaintances working in the primary state schools of the five cities. In that way, the snowball would grow bigger and bigger, and the data could be collected from as many EFL teachers as possible.

Through that sampling method, 288 EFL teachers from more than 150 primary state schools in Balıkesir, Bursa, İstanbul, Kocaeli, and Sakarya took part in the research during a total five-month of period. The related schools were all primary state schools providing education for first to fourth graders. English was taught as a foreign language starting from the second grade and two hours a week for all three grades according to the primary school English curriculum (MoNE, 2018).

In the following *Table 3*, details regarding the demographic information of the participants are demonstrated.

Table 3.

The Demographics of the Total Number of Participants

Variables		f	Valid Percent	Cumulative Percent
Age	18-25	29	10.1	10.1
	26-35	64	22.2	32.3
	36-45	116	40.3	72.6
	46-55	43	14.9	87.5
	Above 55	36	12.5	100.0
Gender	Female	157	54.5	54.5
	Male	131	45.5	100.0
Educational Status	Bachelor's Degree	220	76.4	76.4
	Master's Degree	68	23.6	100.0
City	Balıkesir	46	16.0	16.0
	Bursa	51	17.7	33.7
	Istanbul	73	25.3	59.0
	Kocaeli	53	18.4	77.4
	Sakarya	65	22.6	100.0
Years of Teaching Experience	Less than 1 year	31	10.8	10.8
	1-5 years	66	22.9	33.7
	6-10 years	84	29.2	62.8
	11-15 years	46	16.0	78.8
	16-20 years	28	9.7	88.5
	21 years and above	33	11.5	100.0
Total		288	100	

Table 3 demonstrates that the distribution of the participants' age was 40.3% ($n=116$) between the ages of 36 and 45; 22.2% ($n=64$) between the ages of 26-35, 14.9% ($n=43$) between the ages of 46 and 55; 12.5% ($n=36$) above 55; and, 10.1% ($n=29$) between the ages of 18 and 25. Accordingly, it could be noticed that mostly the teachers whose ages ranged between 36 and 45 accepted to take part in this research, whereas the least number of participation was belong to the novice teachers whose ages ranged between 18 and 25.

Examining the distribution of the participants' gender, it could be stated that 54.5% ($n=157$) of the participants were consisted of female teachers, while the male ones formed the remaining 45.5% ($n=131$). Accordingly, it could be suggested that the male teachers less frequently participated in the current research compared to the female ones, namely, most of the participants, although the gap between the two parties was not big.

The distribution of the participants depending on their educational status could be explained as 76.4% ($n=220$) with the bachelor's degree and 23.6% ($n=68$) of them with the master's degree. Accordingly, it could be expressed that three-quarters of the teachers participating in the current research did not continue studying after receiving their bachelor's degree, whereas the fourth quarter preferred to major in their field.

When it comes to the distribution of participants based on the city they were located in, it was revealed that 25.3% ($n=73$) were in Istanbul, 22.6% ($n=65$) in Sakarya, 18.4% ($n=53$) in Kocaeli, 17.7% ($n=51$) in Bursa, and 16% ($n=46$) in Balıkesir. Accordingly, it could be said that most of the participants were from Istanbul, whereas Balıkesir was the city with the least participation rate although the gap between them was only 9%, which could add up to that the number of the participants in each of the related cities were close to one another.

As for the distribution of participants based on their years of teaching experience, it was as follows: 29.2% ($n=84$) with 6-10 years, 22.9% ($n=66$) with 1-5 years, 16% ($n=46$) with 11-15 years, 10.8% ($n=31$) with 16-20 years, 11.5% ($n=33$) with 21 years and above, and 9.7% ($n=28$) with less than 1 year. Accordingly, it could be worded that most of the participants were experienced in teaching for around 6 to 10 years with a 20% difference from the least participated ones with less than 1 year of experience.

To focus specifically on the participants, furthering their responses with the interview sessions, details regarding their demographic information are demonstrated in *Table 4*.

Table 4.

The Demographics of the Interviewees

Variables		f	Valid Percent	Cumulative Percent
Age	18-25	13	27.7	27.7
	26-35	4	8.5	36.2
	36-45	25	53.2	89.4
	46-55	4	8.5	97.9
	Above 55	1	2.1	100.0
Gender	Female	28	59.6	59.6
	Male	19	40.4	100.0
Educational Status	Bachelor's Degree	37	78.7	78.7
	Master's Degree	10	21.3	100.0
City	Balıkesir	4	8.5	8.5
	Bursa	6	12.8	21.3

	Istanbul	16	34.0	55.3
	Kocaeli	2	4.3	59.6
	Sakarya	19	40.4	100.0
Years of Teaching Experience	Less than 1 year	9	19.1	19.1
	1-5 years	6	12.8	31.9
	6-10 years	15	31.9	63.8
	11-15 years	8	17.0	80.8
	16-20 years	6	12.8	93.6
	21 years and above	3	6.4	100.0
Total		47	100	

Based on the data presented in Table 4, the age distribution of the interviewees is as follows: 53.2% ($n=25$) were between the ages of 36 and 45, representing the largest segment. Individuals aged 18 to 25 made up 27.7% ($n=13$) of the group. Those in the 26 to 35 and 46 to 55 age ranges each accounted for 8.5% ($n=4$). Lastly, only 2.1% ($n=1$) of the interviewees were over the age of 55. Accordingly, it could be noticed that mostly the teachers whose ages ranged between 36 and 45 accepted to take part in the interview sessions, whereas the least number of participations was belonged to the teachers whose ages were above 55.

Upon analyzing the gender distribution of the interviewees, it was found out that 59.6% ($n=28$) of the participants were consisted of female teachers, while the male ones formed the remaining 40.4% ($n=19$). Accordingly, it could be suggested that the female teachers were more predominant among the interviewees of the current research, compared to the male ones.

Considering the distribution of the interviewees depending on their educational status, it could be explained that 78.7% ($n=37$) of them had their bachelor's degree, whereas the ones having their master's degree represented the remaining 21.3% ($n=10$). Accordingly, it could be expressed that only less than one-quarter of the interviewees consisted of the ones having majored in their field.

In terms of the geographical distribution of the interviewees, the data reveals that 40.4% ($n=19$) were based in Sakarya, making it the city with the highest representation. Following Sakarya, 34.0% ($n=16$) of the participants were located in İstanbul. Bursa accounted for 12.8% ($n=6$) of the interviewees, while Balıkesir contributed 8.5% ($n=4$). Lastly, Kocaeli had the smallest proportion of participants, with 4.3% ($n=2$) of the total.

Accordingly, it could be pointed out that most of the interviewees were from Sakarya, whereas Kocaeli was the city with the least participation rate.

Regarding the distribution of the interviewees based on their years of teaching experience, the data can be broken down as follows: 31.9% ($n=15$) have 6-10 years of experience, representing the largest group. Those with less than 1 year of experience make up 19.1% ($n=9$) of the participants. Interviewees with 11-15 years of experience account for 17.0% ($n=8$), while both the 1-5 years and 16-20 years categories each constitute 12.8% ($n=6$) of the sample. Lastly, the smallest group, comprising 6.4% ($n=3$), consists of those with over 21 years of teaching experience. Accordingly, it could be enunciated that most of the interviewees were experienced in teaching for around 6 to 10 years with around 25% difference from the least participated ones who had been teaching EFL for 21 years and above.

3.3. Data collection tools and procedures

The data collection tools of this study were two in total: one to collect the quantitative data and the other to collect the qualitative ones. To start with the first one, *The Knowledge and Beliefs about Developmental Dyslexia Scale* (KBDDS, See Appendix A), developed and tested by Soriano-Ferrer and Echegaray-Bengoa (2014) was adopted. The scale was adopted due to its congruence with the specific responses necessary to address the research questions of this study. This choice was made based on the scale's comprehensive design and its applicability to this study's objectives, as it effectively encompasses the relevant dimensions required for it (e.g., general facts about dyslexia, its symptoms, and how to diagnose and treat dyslexic students). Being a three-point scale consisting of options, namely, 'True', 'False', and 'Do Not Know', KBDDS had 36 items comprised of 25 true and 11 false statements about dyslexia along with both positive and negative perceptions of it to understand how deep the target group's knowledge of the syndrome is or whether they have any misconceptions about it. The scholars organized the statements in a way to fall under three subscales as General Information, Diagnosis, and Treatment with their moderate levels of internal consistency that were 0.69, 0.64, and 0.67 respectively (p. 206), which meant it was acceptable and could be used for future research (Konting et al., 2009). To go into details

with each subscale, General Information includes 17 statements regarding true or false facts and statistics about dyslexia, whereas what Diagnosis does is to provide various symptoms which do or do not belong to the related syndrome with its 10 statements. On the other hand, the last subscale, Treatment presents the medical aspects of dyslexia and different assumptions about how to treat dyslexic individuals in the school context through the remaining 9 statements.

Developing the scale under the revisions of 12 professors at the department of Special Education with learning differences being their area of research interest, the researchers Soriano-Ferrer and Echegaray-Bengoa (2014) aimed to assess the level of awareness among teachers concerning dyslexia and administered it to a sample of 89 elementary school teachers, whose specific subject areas were not detailed in the study. When it came to analyses regarding the reliability and validity of the related data collection tool, the Cronbach's alpha score of the scale was 0.76 by the researchers (2014), which meant its internal consistency was sufficient and could be used to collect data (Brown, 2002). Upon that, the scale was adopted into a Google Form document in order to reach participants from five different cities (i.e., Balıkesir, Bursa, Istanbul, Kocaeli, and Sakarya) in a limited period of time (from April 2023 to August 2023). Within five months, the researcher contacted the school administrations of approximately 400 primary state schools in five cities of Türkiye, namely, Balıkesir, Bursa, Istanbul, Kocaeli, and Sakarya via e-mail, telephone, and acquaintances of teacher colleagues, informed them about the aim of the research and its research ethics committee approval, and requested them to forward the online Google Form document of the quantitative data collection tool to their EFL teachers, who had been estimated to be 661 teachers in total. However, out of the 661 primary school EFL teachers, 288 of them agreed to take part in the quantitative data collection process.

As for the qualitative data collection tool, it was a structured and one-on-one interview (See Appendix B), consisting of seven questions developed by the researcher of this study along with the guidance of her supervisor. To briefly mention the development process of the qualitative data collection tool, the researcher firstly reviewed the related literature and came up with the first draft, including five questions measuring the participants' dyslexia awareness only and consulted her supervisor about them. During the meeting, the supervisor suggested two more questions, which would be on participants' experience in taking related lessons on dyslexia during their bachelor's

degree program and their suggestions on policies to be followed in the Turkish education system and by school administrations to facilitate the optimum EFL learning and teaching experience for EFL teachers and dyslexic students, which would also be in accordance with the research questions. In the process of developing the interview questions, they were checked by both a special education expert and the supervisor of the researcher in terms of the content and consistency. Accordingly, the expert approved the interview questions by stating that they were sufficient to meet the aims of the current study and answer its research questions. On the other hand, the supervisor suggested two more interview questions with the aim of increasing the levels of consistency and reliability in this study. Following the addition of the two questions according to the related suggestions of the supervisor, the qualitative data tool reached its final version. Following that, a separate section was added through the end of the quantitative data collection tool, asking for the teachers' consent to participate in the following qualitative data collection process. Out of the 288 participants, only 47 agreed to take part in it. Like the quantitative one, the qualitative data collection process also took place between April 2023 and August 2023 through online video conference platforms such as Zoom and Google Meet. Depending on the time of their convenience, the 47 participants (See Table 4) were interviewed in a way that each session would take up to 30 minutes. After the interviews, all the responses were transcribed manually by the researcher for following analyses. The reason why the transcriptions were made manually instead of using a third-party software and saving time was to make sure the data remained confidential.

3.4. Data analysis

In a similar vein to the collection procedure, two main stages were needed to complete the analyses of the quantitative and qualitative data so that the research questions of the study could be answered. Accordingly, the quantitative data were mainly responsible for RQ1, while the qualitative ones were for RQ2. With those in mind, the first step taken in order to analyze the quantitative data was to use the Statistical Package for the Social Sciences (SPSS) 26. Through the software, the descriptive statistics of the responses received by the 288 Turkish EFL were obtained. As it has been suggested in the field of social sciences (Blanca et al., 2013), the normality analysis of the data was

conducted. Accordingly, the Skewness value was found to be 0.14, whereas the Kurtosis value was 0.28. A skewness value of 0.14 is very close to 0, indicating that the distribution is approximately symmetric. Being between -1 and +1, the value is considered acceptable (George & Mallery, 2010). As for the Kurtosis value, 0.28 suggests that the distribution is slightly deviated from the normal distribution. As Kurtosis values within the range of -1 to +1 are generally considered acceptable (Field, 2013), it indicates that the distribution is not severely different from normal. Thus, the fact that both of the values being close to 0 suggests that the distribution of the data is fairly close to normal and the following step of the analysis could be taken. Accordingly, the Confirmatory Factor Analysis (CFA), which could be defined as a research method employed to verify whether the quantity of factors (or constructs) and the loadings of observed (indicator) variables on them align with the anticipated outcomes based on theory (Malhotra et al., 2006), was conducted. CFA is essential for validating a scale before its adoption since it verifies whether the scale's structure matches what was intended (Brown, 2015). The relevant analysis checks if the items on the scale accurately measure the concepts they are supposed to, confirming that the theoretical model fits the actual data. It also evaluates how reliably the items reflect the underlying factors, which is crucial for ensuring the scale is both accurate and consistent for future uses (2015). In CFA, values regarding fit indices such as Root Mean Square Error of Approximation (RMSEA), CFI (Comparative Fit Index), and The Goodness of Fit Index (GFI) are obtained (Schreiber et al., 2006). The acceptable ranges of the values are between 0.01 and 0.08 for RMSEA, 0.90 or above for CFI, and 0.85 or above for GFI (Brown, 2015; Hooper et al., 2008). As the values regarding the adopted scale of the current research were found to be 0.03 for RMSEA, 0.92 for CFI, and 0.87 for GFI, it could be interpreted that the structure of the scale was acceptable, and the tool could be used to measure the dyslexia awareness of the participants for further research (Hooper et al., 2008; Hu and Bentler, 1999; Tabachnick and Fidel, 2001). the CFA results were reached through the software named Analysis of a Moment Structures (AMOS) 26.

When it came to the qualitative data, the transcripts of the interviews were analyzed by taking their contents into consideration as a part of the research technique named inductive content analysis. Accordingly, the related data-driven research technique includes the process of organizing, classifying, and comparing the data and drawing theoretical conclusions from them (Cohen et al., 2018; Patton, 2002). By inductive

content analysis, the data summarized and interpreted in descriptive analysis could be examined thoroughly, which provides a chance to come up with further insights regarding concepts and themes that might not have been noticed during quantitative analysis previously focused on (Dündar et al., 2014). Hence, based upon the similarities and differences among the responses of the interviewees for the seven main questions taking place in the related qualitative data collection tool and the frequency of the repetition of words in those responses, the data were interpreted and classified into the emerged themes and categories in compliance with the nature of the conventional content analysis (Coffey and Atkinson, 1996). Subsequently, the categories of all the data developed were manually and simultaneously coded by the researcher and a lecturer who is an expert at the field of Special Education. By means of that, what Turkish primary school EFL teachers knew, lacked knowledge of and misconceived about dyslexia and dyslexic individuals, and their suggestions on what to do individually and collectively to facilitate EFL education for both teachers and dyslexic students were all identified.

CHAPTER IV

4. FINDINGS

4.1. Findings based upon the scale

As a result of the descriptive analysis of the quantitative data, collected through *The Knowledge and Beliefs about Developmental Dyslexia Scale* (Soriano-Ferrer and Echegaray-Bengoa, 2014), the findings needed in order to answer RQ1 and its sub-questions (i.e., RQ1.1, RQ1.2, RQ1.3) were reached. Accordingly, the relevant findings are first presented in Table 5, summarizing the descriptive statistics of the three choices (i.e., true, false, do not know) on the basis of the three subscales (i.e., General Information, Symptoms/Diagnosis, Treatment). Following that, the frequencies and percentages of the responses attributed to each of the 36 items of the scale are demonstrated from Table 6 to Table 8.

Table 5.

Descriptive results of the KBDDS based upon the subscales.

	Percentage of True Responses	Percentage of False Responses	Percentage of Do Not Know
General Information	5.8	5.8	88.4
Symptoms/Diagnosis	50.0	10.0	40.0
Treatment	0.00	0.00	100.0
Total	18.6	5.26	76.1

Table 5 demonstrates the in-service EFL teachers' level of dyslexia awareness is quite low. The participants were in tendency to express their lack of knowledge about dyslexia by selecting the choice "Do Not Know" for 76.1% of the total of 36 items, as it could be examined in Table 6, Table 7, and Table 8 in detail. To go deeper into each subscale, it could be noticed that only 5.8% of the items in General Information was responded correctly, whereas it was the case for half of the items in Symptoms/Diagnosis. On the

other hand, unfortunately, none of the items in Treatment was found to be known by the participants. Furthermore, it was realized that all the items in the related subscale were responded as “Do Not Know”, which could signal that all of the EFL teachers taking part in the present research were at the rock bottom in terms of knowing what kind of language learning needs dyslexic students have and how to meet them in the classroom. With the total rate of 76.1% “Do Not Know”, the result reveals that the participants were mostly not aware of dyslexia, but, at the same time, were mostly aware of their unawareness.

Table 6.

Subscale 1: General Information

Subscale 1: General Information								
		True		False		Do Not Know		Cor. Resp.
No	Item	N	%	N	%	N	%	
1	Dyslexia is the result of a neurologically based disorder.	87	30.2	48	16.7	153	53.1	True
2	Dyslexia is caused by visual-perception deficits, producing the reversal of letters and words.	139	48.3	48	16.7	101	35.1	False
3	A child can be dyslexic and gifted.	95	33.0	53	18.4	140	48.6	True
4	Dyslexic children often have emotional and social disabilities.	79	27.4	67	23.3	142	49.3	True
5	The brains of individuals with dyslexia are different from those of people without dyslexia.	63	21.9	65	22.6	160	55.6	True
6	Dyslexia is hereditary.	62	21.5	60	20.8	166	57.6	True
7	Most studies indicate that about 5% of school-age students have dyslexia.	56	19.4	59	20.5	173	60.1	True

8	Dyslexia has a greater occurrence in males than in females.	58	20.1	54	18.8	176	61.1	True
16	All poor readers have dyslexia.	46	16.0	111	38.5	131	45.5	False
20	Students who have reading disabilities without an apparent cause are called dyslexic.	67	23.3	67	23.3	154	53.5	True
21	People with dyslexia are not stupid or lazy. Knowing about the term helps children.	81	28.1	59	20.5	148	51.4	True
25	I think dyslexia is a myth, a problem that does not exist.	63	21.9	130	45.1	95	33.0	False
27	Problems in establishing laterality (body schema) are the cause of dyslexia.	79	27.4	50	17.4	159	55.2	False
29	Dyslexia refers to a relatively chronic condition that is often not completely overcome.	77	26.7	61	21.2	150	52.1	True
30	Many students with dyslexia continue to have reading problems as adults.	57	19.8	69	24.0	162	56.3	True
31	Many students with dyslexia have low self-esteem.	62	21.5	63	21.9	163	56.6	True
35	Dyslexia usually lasts for a long time.	93	32.3	34	11.8	161	55.9	True

Table 6 demonstrates the items falling under the first subscale, namely General Information, and the statistics regarding the participants' responses for each of them. To go into details about the items according to the ones the participants knew, did not know and misconceived, the first item to be mentioned would be item 25, being the only one the EFL teachers responded correctly in this subscale. According to the relevant statement, 45.1% of the participants ($n=130$) thought dyslexia is not a myth, whereas 33% of them are not sure about it ($n=95$). On the other hand, the statement was true for

the remaining 21.9% ($n=63$). Accordingly, it could be recognized that most of the teachers knew dyslexia is a syndrome that actually exists.

Proceeding to the statements the participants did not know, item 8 brought to light that 61.1% of the participants ($n=176$) did not know if dyslexia has a greater occurrence in males than in females, whereas the statement was true for 20.1% of them ($n=58$) and false for the remaining 18.8% ($n=54$). Accordingly, it could be recognized that most of the participants were not aware of the fact that males are more in tendency to be diagnosed with dyslexia compared to females.

Having only 1% difference with the previous one, item 7 demonstrated that 60.1% of the participants ($n=173$) did not know if 5% of school-age students have dyslexia, whereas the statement was false for 20.5% of them ($n=59$) and true for the remaining 19.4% ($n=56$). Accordingly, it could be regarded that most of the participants were not aware of the fact that one in every ten students has the possibility of being a dyslexic.

Considering item 6, it was unravelled that 57.6% of the participants ($n=166$) did not know if dyslexia is hereditary, whereas the statement was true for 21.5% of them ($n=62$) and false for the remaining 20.8% ($n=60$). Accordingly, it could be registered that most of the participants were not aware of the fact that dyslexia is hereditary.

When item 31 was examined, it was unfolded that 56.6% of the participants ($n=163$) did not know if many students with dyslexia low self-esteem have, whereas the statement was false for 21.9% of them ($n=63$) and true for the remaining 21.5% ($n=62$). Accordingly, it could be pointed out that most of the participants were not aware of that the self-confidence level of dyslexic students are mostly low.

Likewise, item 30 unravelled that 56.3% of the participants ($n=162$) did not know if many students with dyslexia continue to have reading problems as adults, whereas the statement was false for 24% of them ($n=69$) and true for the remaining 19.8% ($n=57$). Accordingly, it could be suggested that most of the participants were not aware of that dyslexic individuals continue to have difficulty in reading fluently regardless of how old they become.

Another similar result observed was in item 35. Accordingly, it was revealed that 55.9% of the participants ($n=161$) did not know if the symptoms of dyslexia usually last for a long time, whereas the statement was true for 32.3% of them ($n=93$) and false for the remaining 11.8% ($n=34$). Accordingly, it could be implied that most of the participants

were not aware of the chronicity of the symptoms of dyslexia although they could be reduced through suitable individualized education programs in time.

With only 0.3% difference, item 5 unfolded that 55.6% of the participants ($n=160$) did not know if the brains of individuals with dyslexia are different from those of people without dyslexia, whereas the statement was true for 22.6% of them ($n=65$) and false for the remaining 21.9% ($n=63$). Accordingly, it could be suggested that most of the participants were not aware of the fact that there were differences between dyslexic and non-dyslexic brains.

When it was item 27's turn, it was realized that 55.2% of the participants ($n=159$) did not know if problems in establishing laterality (body schema) are the cause of dyslexia, whereas the statement was true for 27.4% of them ($n=79$) and false for the remaining 17.4% ($n=50$). Accordingly, it could be understood that most of the participants were not aware of that dyslexia is not caused by problems in establishing laterality.

Item 20 revealed that 53.5% of the participants ($n=154$) did not know if students who have reading disabilities without an apparent cause are called dyslexic, whereas the statement was true for 23.3% of them ($n=67$) and false for the remaining 23.3% ($n=67$). Accordingly, it could be registered that most of the participants were not aware of that students who have reading disabilities without an apparent cause are not dyslexic.

With one fewer respondent, item 1 brought to light that 53.1% of the participants ($n=153$) did not know if dyslexia was neurologically based or not, whereas the statement was true for 30.2% of them ($n=87$) and false for the remaining 16.7% ($n=48$). Therefore, it could be stated that the majority of the participants did not have the knowledge of the relationship between dyslexia and the brain.

When item 29 was taken into consideration, it was detected that 52.1% of the participants ($n=150$) did not know if dyslexia refers to a relatively chronic condition that is often not completely overcome, whereas the statement was true for 26.7% of them ($n=77$) and false for the remaining 21.2% ($n=61$). Accordingly, it could be stated that most of the participants were not aware of that dyslexia is a relatively chronic condition that is often not completely overcome.

Focusing on item 21, it was noticed that 51.4% of the participants ($n=148$) did not know people with dyslexia are not stupid or lazy, whereas the statement was true for 28.1% of them ($n=81$) and false for the remaining 20.5% ($n=59$). Accordingly, it could be

indicated that most of the participants were not aware of the fact that dyslexic individuals are neither stupid nor lazy.

Similarly, item 4 showed that 49.3% of the participants ($n=142$) did not know if dyslexic children often have emotional and social disabilities, whereas the statement was true for 27.4% of them ($n=79$) and false for the remaining 23.3% ($n=67$). Accordingly, it could be perceived that most of the participants were not aware of the fact that dyslexic children often have emotional and social disabilities.

When examining item 3, it was noticed that 48.6% of the participants ($n=140$) did not know if a child can be dyslexic and gifted, whereas the statement was true for 33% of them ($n=95$) and false for the remaining 18.4% ($n=53$). Accordingly, it could be pointed out that most of the participants had no idea of the fact that there is not an inverse proportion between dyslexia and giftedness.

According to the responses to item 16, it was found that 45.5% of the participants ($n=131$) did not know if all poor readers have dyslexia, whereas the statement was false for 38.5% of them ($n=111$) and true for the remaining 16% ($n=46$). Accordingly, it could be figured that the number of participants who were not sure whether being a poor reader automatically means the person was dyslexic was the highest although the ones knowing that it was not the case were also quite a few.

Being the only misconception in the first subscale, which is General Information, item 2 demonstrated that 48.3% of the participants ($n=139$) believed dyslexia was caused by visual perception deficits resulting in reversals of letters and words, whereas 35.1% of them are not sure about it ($n=101$). On the other hand, the statement was false for the remaining 16.7% ($n=48$). Accordingly, it could be uttered that most of the participants had the misconception of associating dyslexia with vision problems causing individuals to see what is written in distorted shapes.

Table 7.

Subscale 2: Symptoms/Diagnosis

Subscale 2: Symptoms/Diagnosis									
			True		False		Do Not Know		
Item No	Item	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	Correct Response	
9	Children with dyslexia are more consistently impaired in phonemic awareness (i.e., ability to hear and manipulate sounds in language) than any other ability.	79	27.4	72	25.0	137	47.6	True	
11	People with dyslexia have below average Intelligence.	73	25.3	108	37.5	107	37.2	False	
12	The reading of students with dyslexia is often characterized by inaccuracy and lack of fluency.	141	49.0	30	10.4	117	40.6	True	
13	Seeing letters and words backwards is a basic characteristic of dyslexia.	128	44.4	35	12.2	125	43.4	False	
14	Difficulty with the phonological processing of information is one of the most important deficits in dyslexia.	76	26.4	97	33.7	115	39.9	True	
15	Intelligence tests are useful in identifying dyslexia.	81	28.1	83	28.8	124	43.1	True	
32	Children with dyslexia have problems with decoding and spelling but not	100	34.7	60	20.8	128	44.4	True	

	with listening comprehension.								
33	Applying an individual reading test is essential to diagnosing dyslexia.	118	41.0	48	16.7	122	42.4	True	
34	Dyslexics tend to spell words wrong.	141	49.0	37	12.8	110	38.2	True	
36	Dyslexia is characterized by difficulty with learning to read fluently.	130	45.1	57	19.8	101	35.1	True	

Table 7 demonstrates the items falling into the second subscale, which is titled Symptoms/Diagnosis, and the statistics regarding the participants' responses for each of them. Going into details about the items according to the ones the participants knew, did not know and misconceive, it could be seen that Symptoms/Diagnosis included more items that were known by most of the participants, compared to the first subscale. Starting with the mostly known statements, it was noticed in item 12 that 49.3% of the participants ($n=141$) believed the reading of students with dyslexia is often characterized by inaccuracy and lack of fluency, whereas the 40.6% of them had no idea about it ($n=117$). On the other hand, the statement was false for the remaining 10.4% ($n=30$). Accordingly, it could be signified that most of the participants knew the common symptom of dyslexia related to reading fluency. However, it could be uttered that the high number of participants who were not sure about that fact also stood out.

In the same vein, item 34 unfolded that 49% of the participants ($n=141$) were of opinion that dyslexics tend to spell words wrong, whereas 38.2% of them were not sure about it ($n=110$). On the other hand, the statement was false for the remaining 12.8% ($n=37$). Accordingly, it could be said that most of the participants knew dyslexic individuals have a difficulty in spelling, whereas the number of the ones not knowing the related symptom was also high.

Looking at item 36, it was revealed that 45.1% of the participants ($n=130$) esteemed that dyslexia is characterized by difficulty with learning to read fluently, whereas 35.1% of them were not sure about it ($n=101$). On the other hand, the statement was false for the

remaining 19.8% ($n=57$). Accordingly, it could be deduced that most of the participants knew dyslexia is related to having difficulty in learning to read fluently, although there were also high number of teachers who were not sure of that.

When examining item 11, it was revealed that 37.5% of the participants ($n=108$) assumed people with dyslexia do not have below average intelligence, whereas 37.2% of them ($n=107$) were not sure about it. On the other hand, the statement was true for the remaining 25.3% ($n=73$). Accordingly, it could be specified that the number of participants believing that dyslexia does not have a negative effect on their intelligence was slightly higher than the ones who were not so sure of that. Hence, it could be highlighted that there were also a considerable number of teachers questioning the intelligence of dyslexic individuals.

Continuing with the statements about dyslexia, regarding which the participants admitted their lack of knowledge, item 9 revealed that 47.6% of the participants ($n=137$) did not know if children with dyslexia generally problems with phonological awareness have, whereas the statement was true for 27.4% of them ($n=79$) and false for the remaining 25% ($n=72$). Accordingly, it could be noticed that most of the participants were not aware of the fact that phonology is one of the factors affecting the reading process of individuals with dyslexia.

According to item 32, 44.4% of the participants ($n=128$) did not know children with dyslexia have problems with decoding and spelling but not with listening comprehension, whereas the statement was true for 34.7% of them ($n=100$) and false for the remaining 20.8% ($n=60$). Accordingly, it could be signified that most of the participants were not aware of that dyslexic individuals also have symptoms related to phonological aspects. On the top of that, a high number of participants also had the misconception of not counting that as one of the symptoms.

Concentrating on the diagnosis of dyslexia, it was unravelled in item 15 that 43.1% of the participants ($n=124$) did not know if intelligence tests are useful in identifying dyslexia, whereas the statement was false for 28.8% of them ($n=83$) and true for the remaining 23.3% ($n=81$). Accordingly, it could be pointed out that most of the participants were not aware of the place intelligence tests have in the identification process of dyslexia.

Similarly, item 33 brought to light that 42.4% of the participants ($n=122$) did not know if applying an individual reading test is essential to diagnosing dyslexia, whereas the statement was true for 41% of them ($n=118$) and false for the remaining 16.7% ($n=48$). Accordingly, it could be explained that the number of the participants who were not aware of the place of individual reading tests in the process of diagnosing dyslexia was slightly higher than the ones knowing the related fact.

Going back to the symptoms of dyslexia, it was detected in item 14 that 39.9% of the participants ($n=115$) did not know if difficulty with the phonological processing of information was one of the most important deficits in dyslexia, whereas the statement was false for 33.7% of them ($n=97$) and true for the remaining 26.4% ($n=76$). Accordingly, it could be stated that most of the participants were not aware of the phonological aspect of dyslexia.

As for item 13, the only misconception of the participants within the second subscale, it was shown that 44.4% of the participants ($n=128$) considered that seeing letters and words backwards is a basic characteristic of dyslexia, whereas the 43.4% of them had no idea about it ($n=125$). On the other hand, the statement was false for the remaining 12.2% ($n=35$). Accordingly, it could be indicated that most of the teachers misconceived that one of the common symptoms of dyslexia was seeing letters and words backwards, while there were almost the same number of teachers who were not sure of that.

Table 8.

Subscale 3: Treatment

Subscale 3: Treatment								
		True		False		Do Not Know		Correct Response
Item No	Item	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
10	Modelling fluent reading is often used as a teaching strategy.	81	28.1	71	24.7	136	47.2	True
17	Children with dyslexia can be helped by using coloured lenses/coloured overlays.	61	21.2	84	29.2	143	49.7	False

18	Physicians can prescribe medications to help students with dyslexia.	52	18.1	77	26.7	159	55.2	False
19	Multisensory instruction is not an effective training method at the moment.	68	23.6	75	26.0	145	50.3	False
22	Giving students with dyslexia accommodations, such as extra time on tests, shorter spelling lists, special seating, etc., is unfair to other students.	41	14.2	119	41.3	128	44.4	False
23	Intervention programs that emphasize the phonological aspects of language with the visual support of letters are effective for students with dyslexia.	71	24.7	76	26.4	141	49.0	True
24	Most teachers receive intensive training in working with dyslexic children.	57	19.8	109	37.8	122	42.4	False
26	Repeated reading techniques are useful reading material to improve reading fluency.	81	28.1	94	32.6	113	39.2	True
28	Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.	62	21.5	89	30.9	137	47.6	True

Table 8 demonstrates the items falling into the third subscale, which is titled as Treatment, and the statistics regarding the participants' responses for each of them. What was different in the relevant statistics of this subscale compared to the previous two is that none of its statements were found to be known by the participants. To go into details about the items one by one, item 18 demonstrated that 55.2% of the participants ($n=159$) did not know if physicians can prescribe medications to help students with dyslexia, whereas the statement was false for 26.7% of them ($n=77$) and true for the remaining 18.1% ($n=52$). Accordingly, it could be perceived that the participants were

largely unaware of that physicians cannot prescribe medications to help students with dyslexia.

Item 17 included another statement about dyslexia on its medical treatment and provided evidence that 49.7% of the participants ($n=143$) did not know if children with dyslexia can be helped by using coloured lenses/coloured overlays, whereas the statement was false for 29.2% of them ($n=84$) and true for the remaining 21.2% of them ($n=61$). Hence, it could be expressed that most of the participants were not aware of the fact that children with dyslexia cannot be helped by using coloured lenses/coloured overlays.

When the focus was on how to treat dyslexic students in classroom contexts, item 19 indicated that 50.3% of the participants ($n=142$) did not know if multisensory instruction is not an effective training method now, whereas the statement was false for 26.0% of them ($n=75$) and true for the remaining 23.6% ($n=68$). Accordingly, it could be signified that the majority of the participants were not aware of that multisensory instruction is one of the effective training methods for dyslexic individuals at the moment.

In the same vein, item 23 highlighted that 49% of the participants ($n=141$) did not know if intervention programs that emphasize the phonological aspects of language with the visual support of letters are effective for students with dyslexia, whereas the statement was false for 26.4% of them ($n=76$) and true for the remaining 24.7% ($n=71$). Therefore, it could be realized that most of the participants were not aware of the effectiveness of intervention programs focusing on phonological aspects of language with the visual support of letters.

Through item 28, it was observed that 47.6% of the participants ($n=137$) did not know if students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies, whereas the statement was false for 30.9% of them ($n=89$) and true for the remaining 21.5% ($n=62$). Consequently, it could be conceived that most of the participants were not aware of the educational needs of dyslexic students such as structured, sequential, direct instruction in basic skills and learning strategies.

With a difference of only one participant, item 10 illustrated that 47.2% of the participants ($n=136$) did not know if modelling fluent reading is often used as a teaching strategy for dyslexic students, whereas the statement was true for 28.1% of them ($n=81$) and false for the remaining 24.7% ($n=71$). In the light of the relevant findings, it could

be expressed that most participants were not aware of the fact that modelling fluent reading is one of the teaching strategies used for dyslexic students.

Exploring their perceptions on dyslexic students, item 22 unveiled that 44.4% of the participants ($n=128$) did not know if giving students with dyslexia accommodations, such as extra time on tests, shorter spelling lists, special seating, etc., is unfair to other students, whereas the statement was false for 41.3% of them ($n=119$) and true for the remaining 14.2% ($n=41$). As a result, it could be noticed that the number of the participants who were not sure whether giving students with dyslexia accommodations was unfair was slightly higher than the ones believing that it was not true. Hence, it could be indicated that there were considerable number of EFL teachers who were not aware of the basic educational rights of dyslexic students.

Likewise, item 24 unravelled that 42.4% of the participants ($n=122$) did not know if most teachers receive intensive training in working with dyslexic children, whereas the statement was false for 37.8% of them ($n=109$) and true for the remaining 19.8% ($n=57$). Therefore, it could be worded that most of the teachers were either aware of the lack of in-service teachers training services on dyslexia or were not aware if there was any.

When it came to item 26, it was also observed that 39.2% of the participants ($n=113$) did not know if repeated reading techniques are useful reading material to improve reading fluency, whereas the statement was false for 32.6% of them ($n=94$) and true for the remaining 28.1% ($n=81$). Thus, it could be rendered that most of the teachers were not aware of the usefulness of repeated reading techniques on the development of reading fluency.

4.2. Findings based upon the interview questions

As a result of the inductive content analysis of the qualitative data, collected from 47 participants through structured interviews, findings needed in order to answer RQ2 and its sub-questions (i.e., RQ2.1, RQ2.2, RQ2.3) were reached. Accordingly, the relevant findings of the content analysis are illustrated from Table 9 to Table 16.

4.2.1. Interview question 1: What is dyslexia?

Table 9.

Interview Question 1: What is Dyslexia?

Code	Frequency (N)	Percentage (%)
Reading difficulty	20	42.5
Seeing words backwards	14	29.7
No idea/Unsure	9	19.1
Writing difficulty	4	8.5

Table 9 demonstrates that 42.5% of the participants ($n=20$) defined dyslexia as a reading difficulty, whereas 29.7% of them ($n=14$) misconceived it as seeing words backwards. On the other hand, there were also a group of participants with a rate of 19.1% ($n=9$) that were not quite sure about the related matter. As for the remaining 8.5% of the teachers ($n=4$), they associated dyslexia with difficulty in writing although it is rather the primary symptom of dysgraphia. Nevertheless, it could also occur alongside of dyslexia as a secondary symptom in some cases depending on individuals' reading difficulty. According to Participant 12 (P12), who emphasized she did not know much about the syndrome, dyslexia is related to difficulty in reading. Being on the same vein, Participant 26 (P26) stated that not being able to read in an accurate way affects the academic life of the dyslexics. When it came to Participant 16 (P16), who looked dyslexia from different perspective, she said *"As far as I know, dyslexics are quite smart people. However, as they see letters and words backwards, it is difficult for them to read and write properly."*

4.2.2. Interview question 2: How do you detect that there is a dyslexic student in your class?

Table 10.

Interview Question 2: How do you detect that there is a dyslexic student in your class?

Code	Frequency (N)	Percentage (%)
If a student has difficulty in reading	20	42.5
If a student reads backward	14	29.7
No idea/Unsure	9	19.1
If a student has difficulty in writing	4	8.5

Table 10 demonstrates that 42.5% of the participants ($n=20$) would detect a dyslexic student if s/he has difficulty in reading, whereas 8.5% of them ($n=4$) believed that it must be writing that the student would find challenging, which is again a symptom of dysgraphia but could be seen alongside of dyslexia in some cases. On the other side, 29.7% of the participants ($n=14$) continued to misconceive dyslexia as seeing words backwards and assumed that needed to be the symptoms to give out the situation of a dyslexic student. In addition to those, the teachers stating their lack of knowledge on the related matter were among the 19.1% of the participants ($n=9$). According to Participant 1 (P1), doing research was necessary for a better understanding. For Participant 15 (P15), if her student had difficulty in reading and writing although s/he was a smart one, she would consult with an expert about it. Emphasizing the importance of collaboration with school counsellors to get to know more about their students, Participant 40 (P40) stated “*First, I would inform the school counsellor about it.*”. With a similar tone, Participant 41 (P41) responded to the related interview question as “*I don’t know... I might not have realized it. School counsellors let us know about such things generally.*”

4.2.3. Interview question 3: Have you ever had a dyslexic student? If yes, have you encountered any difficulties in the process of teaching English to your student?

Table 11.

Interview Question 3: Have you ever had a dyslexic student? If yes, have you encountered any difficulties in the process of teaching English to your student?

Code	Frequency (N)	Percentage (%)
Never had	44	93.6
Ignored	3	6.3

Table 11 demonstrates that 93.6% of the participants ($n=44$) had never taught a dyslexic student, whereas the remaining 6.3% experienced it without a success. According to Participant 3 (P3), the dyslexic student in her classroom was completely uninterested in learning English and never accepted her offer to participate in the classroom activities. Rather, the student would prefer to talk to his peers or sleep in the meantime. That being the case, P3 decided to ignore the student so as not to waste the class time. The case was almost the same in the classroom of Participant 39 (P39) who also had a dyslexic student not willing to learn English according to her. The participant said *“I have one in one of the classes I am teaching this year, but he has no interest in learning English. He just talks to himself or his peers out loud while the rest of us is busy with doing activities... I ask him to participate sometimes, but he only joins when he feels like it. So, I just prefer to let him do whatever he wants and go on with the lessons in order not to fall behind the curriculum.”* On the other side, the response of Participant 21 (P21) who had never taught a dyslexic student was *“No, I don’t think so... If there was one, our school counsellor would inform me.”*

4.2.4. Interview question 4: What teaching methods do/would you apply to your dyslexic student?

Table 12.

Interview Question 4: What teaching methods do/would you apply to your dyslexic student?

Code	Frequency (N)	Percentage (%)
Individualized education model	21	44.6
No idea/Unsure	9	19.1
Consulting a specialist	8	17.0
Modelling fluent reading	5	10.6
Applying a test	4	8.5

Table 12 demonstrates that 44.6% of the participants ($n=21$) did or would apply an individualized education model for their dyslexic students, while 17% of them ($n=8$) would consult a specialist to know what would be the best for their dyslexic student. Furthermore, there were also a 10.6% of the participants ($n=5$) believing that modelling fluent reading would be effective for their dyslexic student, whereas starting with a test to understand the potential, areas of interest and needs of the student would be more beneficial according to the 8.5% of them ($n=4$). On the other hand, the remaining 19.1% ($n=9$) kept their silence by indicating that they did not have enough knowledge of dyslexia to be able to come up with a specific teaching method for dyslexic students. According to Participant 2 (P2), individualized education program might be effective for dyslexic students to fill the gap in their target language and focus more on what they find difficult. Being on the same line, Participant 32 (P32) came up with the following response: “An individualized education model should be used, I think... The student should be tested first, of course, and the points he has difficulty in should be detected. Then, after or between classes, he would be taking extra ones and catch up with his peers... I don’t think it is possible for the student learn like the rest without an intervention program.”. Emphasizing the importance of doing research, Participant 19 (P19) stated “I would do some research first and then apply what I have learned.”.

Expressing his unsurety of what teaching methods to apply to dyslexic students, on the other hand, Participant 6 (P6) said “*I don’t know... I have never applied one.*”

4.2.5. Interview question 5: Did you take a course on dyslexia during your bachelor’s degree program?

Table 13.

Interview Question 5: Did you take a course on dyslexia during your bachelor’s degree program?

Code	Frequency (N)	Percentage (%)
No	47	100
Yes	0	0

Table 13 demonstrates that 100% of the participants (N=47) responded that they did not take any course on dyslexia during their bachelor’s degree program. Hence, it could be uttered that none of the participants had an opportunity to take a formal lesson on dyslexia while getting ready for teaching English, without knowing they would encounter tens of students with individual differences. Considering the participants’ responses, Participant 22 (P22) stated that he had never heard of it during his bachelor’s degree program. With an additional explanation about her memory, Participant 19 (P19)’s response to the question was “*There was a course in our department... Special Education. It might have been mentioned in that course, like what it meant maybe, but I don’t really remember the details.*”

4.2.6. Interview question 6: Have you ever been provided any in-service training on dyslexia throughout your teaching career?

Table 14.

Interview Question 6: Have you ever been provided with any in-service training on dyslexia throughout your teaching career?

Code	Frequency (N)	Percentage (%)
No	46	97.8
Yes	1	2.1

Table 14 demonstrates that 97.8% of the participants ($n=46$) had never been provided with any in-service training on dyslexia throughout their teaching career, while only 2.1% of them ($n=46$) responded the question affirmatively. However, when further asked, P41 responded that she took part in an in-service training program on students with special needs and dyslexia was shortly mentioned at one point. Hence, it could be noticed that hardly any of the participants had the chance to encounter an in-service training program specifically on dyslexia hitherto. Considering the responses of the participants, Participant 35 (P35) expressed that she never heard of such an in-service training, whereas Participant 23 (P23) stated “*I took an online course in special education a couple of years ago and I remember dyslexia being mentioned there, but only conceptually... Like what it means and what kind of symptoms people with dyslexia have, etc.*”

4.2.7. Interview question 7.1: What kind of policies should be followed in the education system to facilitate foreign language education for both EFL teachers and dyslexic students?

Table 15.

Interview Question 7.1: What kind of policies should be followed in the education system to facilitate foreign language education for both EFL teachers and dyslexic students?

Code	Frequency (N)	Percentage (%)
In-service teacher training	16	34.0
No idea/Unsure	9	19.1
Interactive whiteboard applications	7	14.8
Cooperation with specialists	5	10.6
Pre-seminar for novice EFL teachers	4	8.5
A related course for every grade to raise awareness of both teachers and students	2	4.2
Public service ads on dyslexia in collaboration with MoNE	1	2.1
Dyslexia-friendly textbooks (e.g., supported with audio and visuals)	1	2.1
Extra curriculum for classrooms with dyslexic students	1	2.1
Establishing national council on dyslexia	1	2.1

According to Table 15, 34.0% of the participants ($n=16$) suggested that MoNE should provide in-service teacher training programs on dyslexia, while 14.8% of them ($n=7$) pointed that there should be interactive whiteboard applications designed for dyslexic students' educational needs. Moreover, 10.6% of the teachers ($n=5$) stated that they should be provided with opportunities to cooperate with specialists to better understand

dyslexia and dyslexic students and offer them suitable teaching methods. It was recommended by 8.5% of the participants that novice EFL teachers should become ready to teach effectively when having such students with the provision of MoNE's pre-seminars on dyslexia. It was also suggested by 2.1% of the participants ($n=1$) that dyslexic students should be provided with dyslexia-friendly textbooks supported with audio and visuals, extra curriculum for classrooms with dyslexic students ($n=1$), and the establishment of national council on dyslexia ($n=1$). As for the remaining 19.1% of the participants ($n=9$), they expressed that they did not have sufficient knowledge of dyslexia to be able to come up with any suggestions on the related matter.

According to Participant 7 (P7), seminars and trainings specifically on dyslexia would be of help for raising awareness among teachers. Likewise, Participant 16 (P16) suggested that MoNE should provide not only teachers but also families with seminars on dyslexia. Later, P16 added that it would also be effective if specialists like special education teachers were collaborated with. Emphasizing the importance of technology, Participant 40 (P40) stated “...*Technology should be used more for the education of such children. There should be applications on the interactive whiteboard designed for them, so they can participate in lessons easily.*”. Being on the same line with P40, Participant 39 (P39) also talked about her dyslexic student's situation. The teacher's response was “*The only time my dyslexic student wants to participate in the lesson is when we play games on the interactive whiteboard. I mean, he does ignore most of them, but still... If he finds a game interesting, he just rushes to the whiteboard and tries to match words with pictures for example. Such activities may be beneficial for students like him.*”. With his focus on the textbooks, Participant 46 (P46)'s suggestion was, on the other hand, “*If such children have a problem in reading, the textbooks should be designed in a way they can read easily... Ehm... The font sizes might be adjusted... Or maybe more pictures can be added... I don't know.*”.

4.2.8. Interview question 7.2: What kind of support should the school administration provide to facilitate foreign language education for both EFL teachers and dyslexic students?

Table 16.

Interview Question 7.2: What kind of support should the school administration provide to facilitate foreign language education for both EFL teachers and dyslexic students?

Code	Frequency (N)	Percentage (%)
Dyslexia awareness campaigns (e.g., seminars, events, etc.)	17	36.1
Effective individualized education programs on English	13	27.6
No idea/Unsure	9	19.1
Cooperation with special education teachers	4	8.5
Cooperation with dyslexic students and their families	3	6.3
Dyslexia-friendly library	1	2.1

According to Table 16, 36.1% of the participants ($n=17$) suggested that school administrations should take the lead in organizing dyslexia awareness campaigns such as seminars, events that include dyslexic guests to make motivational speeches for dyslexic students and to raise awareness among their peers and teachers, etc. Moreover, 27.6% of the participants ($n=13$) recommended that schools should provide effective individualized education programs on English. Pointing that students with special needs in her school were only provided individualized education programs only on Turkish and Mathematics, P28 emphasized that such a program was needed for English, as well. According to some of the participants, cooperation with special education teachers (8.5%, $n=4$) and dyslexic students' families (6.5%, $n=3$) might enhance the language learning development of dyslexic students and school administrations should follow the process closely. Besides, it was also mentioned by one participant that it might be beneficial for dyslexic students' target language development if schools provided

dyslexia-friendly libraries with audio books in English provided for each grade (2.1%, n=1).

To provide some of the most common responses, Participant 1 (P1) stated *“I think schools should promote collaboration between parents, teachers, and specialists. There might be parents noticing something wrong or different with their child but not knowing whom to consult with, for example. That would be helpful for the student’s education process.”*. Looking at the scenario from teachers’ point of view, Participant 3 (P3) responded as *“The school administration should be guiding their students and teachers with seminars, and the students with dyslexia should be taking individualized education programs on English. They can take classes with their peers, but it would be hard for us teachers to give special attention to them in each activity... We should also consider the curriculum and time management unfortunately. They might fall behind in the class compared to their peers, so individualized programs are necessary, I think.”*. In a similar vein, Participant 26 (P26) also suggested individualized education programs by saying *“For me, effective individualized education programs on English for students with dyslexia is a must because it is obvious that such children will fall behind in the class as they would read more slowly and complete tasks much later than the rest of the classroom most probably. So, they would need extra care and time... But the ones teaching during those individualized education programs should also be effective teachers. They should know how to teach English for dyslexic children.”* Mentioning how responsive her school was when it came to organizing events, Participant 17 (P17) stated *“I think a lot of things should be done to raise awareness in schools. Our school often organizes events for different special occasions, for example. Dyslexia can also be included in those events, and different campaigns can be helpful, too.”*. From the perspective of Participant 11 (P11), school libraries should be adjusted according to the needs of dyslexic students. The participant’s suggestion was *“I don’t really know if students with dyslexia like reading books, but I think school libraries should be the places where students with dyslexia would feel comfortable. They should be able to reach books they can easily read and understand. Or maybe audiobooks... They can enjoy listening to audiobooks, right?”*.

CHAPTER V

5. DISCUSSION, CONCLUSION, AND SUGGESTIONS

5.1. Discussion of the findings

5.1.1. Discussion on research question 1: To what extent are Turkish primary school EFL teachers aware of dyslexia?

When the findings were examined within the scope of the responses provided by the participants for KBDDS, it was noticed that Turkish primary school EFL teachers' level of dyslexia awareness were quite low (See Tables 6-8). Their awareness was at such a low level that the data collection period of the present research could have well been assumed as the very first time some might have heard of dyslexia, which in a way could be considered as a proof that there has been a gap in the Turkish national education system regarding in-service teacher training on dyslexia (Çoğaltay and Çetin, 2020). The only point most of the participants were knowledgeable of was dyslexia's relation to reading skills unlike the ones in the studies of Kalsoom et al. (2020), Basim et al. (2019), and Ghimiare (2017), where the participants were moderately aware of the symptoms of dyslexia and their effects on the learning process of dyslexic students. However, they were not sure about the processing of its phonological components and how to teach EFL to their dyslexic students contrary to the study of Mullikin et al. (2021), in which the participants were qualified with adjusting their teaching strategies depending on the educational needs of their dyslexic students. What was more, they had misconceptions about the mirror-image perception of letters in the process of reading. Revealing in their studies that most of the teacher participants only knew the dyslexia-reading relation and misconceived about its phonological aspects, the present research could be regarded along the same lines as the one conducted by Ness and Southall (2010). It also shared similarities with the studies of Çoğaltay and Çetin (2020), Ertaş (2022), Kodan (2020), and Şahin et al. (2020), in which the participants were also reported to have inadequate knowledge of dyslexia.

To dive deeper into the answers reached for RQ1, it could be interpreted that the findings of this study reveal a concerning low level of dyslexia awareness among Turkish primary school EFL teachers, which can be traced back to several key factors. Primarily, the lack of in-service training on dyslexia within the Turkish national education system, as highlighted by Çoğaltay and Çetin (2020), suggests that teachers are not receiving adequate professional development to fully comprehend and address dyslexia in their classrooms. This deficiency likely contributes to the teachers' limited understanding, as they possess only a basic awareness of dyslexia's link to reading skills, while lacking knowledge of its phonological aspects and effective teaching strategies. Additionally, misconceptions observed among teachers, such as the incorrect belief in the mirror-image perception of letters, point to a broader problem of insufficient exposure to current research and best practices in dyslexia education. The disparity between these findings and those of Mullikin et al. (2021), where teachers were able to adapt their teaching strategies to meet the needs of dyslexic students, underscores the critical need for targeted, evidence-based training that prepares teachers to support diverse learners. Moreover, the consistency of these findings with those of Ness and Southall (2010) and other recent studies suggests that this issue is not an isolated one, but rather part of a larger systemic challenge in preparing teachers to effectively educate students with dyslexia. Without addressing these training gaps through comprehensive teacher education programs, misconceptions and limited awareness are likely to continue, ultimately impeding the academic success of students with dyslexia.

5.1.1.1. Discussion on research question 1.1: To what extent do Turkish primary school EFL teachers know dyslexia?

When the accurate responses of most of the participants were examined, it was understood that the existence of dyslexia, its relationship with reading skills, and its non-existent negative effect on intelligence were all acknowledged by most of the Turkish primary school EFL teachers. Accordingly, the participants mostly knew that dyslexia is not a figment of the imagination, that it actually exists and affects individuals' lives, especially in terms of reading as far as they were aware of. However, what they were not aware of was that reading is one of the building blocks of the whole learning process;

therefore, these people need to make extra efforts and devote extra time to be able to use this fundamental skill in the expected way so that they could pass to the next stage in learning. Besides, it is not even the only obstacle getting in their way in this process. Dyslexics find it challenging to process the input they only hear because it just feels so abstract that they could not happen to find a suitable place to store the information in their brains (Lilienfeld et al., 2010). Thus, they need to use a backup in their sensory system to support and stimulate the action of learning, which is vision in most of the cases. In the existence of visual support, the dyslexic students could easily match what they hear and see, then turn it into a long-term memory. Otherwise, the input just passes over their head as Shaywitz et al. (2021) assert. However, as teachers are not aware of their situation completely and expect their dyslexic students to complete every type of task at the same time as their peers, the dyslexics are not able to show their actual potential and seem to be academically behind in the classroom in the eyes of them (Gwernan-Jones and Burden, 2009). Losing their self-esteem, the dyslexics become afraid of making mistakes in front of their peers by assuming that everybody would think they are stupid, which is, in fact, far from what is happening. Hence, knowing the existence of dyslexia and its connection to reading skills only might not mean anything and have any positive effect on dyslexic students if teachers are not fully aware of how dyslexics live and what they need to do to be able to learn in the school (Ness and Southall, 2010). For that reason, it could be pointed out that Turkish primary school EFL teachers have a long way to go in the process of understanding dyslexia and the educational needs of dyslexic students and providing suitable language teaching methods for them (Tosun et al., 2021).

5.1.1.2. Discussion on research question 1.2: To what extent do Turkish primary school EFL teachers lack knowledge of dyslexia?

From the general facts and symptoms of dyslexia to ways to treat dyslexic individuals, especially in terms of school context, there is much one should know. However, similar to the studies of Çoğaltay and Çetin (2020), Ertaş (2022), Kodan (2020), Şahin et al. (2020), and Ness and Southall (2010), the participants of the present research appeared to have only some ideas limited to the reading-based symptoms of the syndrome, which

could in a way be considered as basic-level knowledge. Unfortunately, when it came to the other aspects of dyslexia, it was noticed that the participants highly lacked awareness.

To go into details about the points they were revealed to be unaware of, one of the biggest gaps in the participants' knowledge of dyslexia was the fact that dyslexia is neurobiological in origin, which results in differences in the way the dyslexic brain works. It works, just normally, but not in the standard way (Eide and Eide, 2023). As Shaywitz (2003) discovered it two decades ago, the dyslexic brain demonstrates its difference with the spots it activates during the action of reading. According to the scholar, the non-dyslexic brain activates its posterior area in the left hemisphere while reading. However, the dyslexic brain uses the frontal area of the right hemisphere, which prevents the reading process from getting automatized. For that reason, dyslexics have to perform the action of reading manually, which still lets them do it but at a slower pace and with more efforts compared to the non-dyslexic individuals. As dyslexia is hereditary and developmental (Erbeli et al., 2022), the dyslexics are born with this syndrome and are likely to live with it till the end of their lives regardless of the progress they could make by practicing. Hence, without being aware of this side of dyslexia, teachers might well be confused by the reading performances of their dyslexic students no matter what grade they would be at. The teachers would not know that they should allocate these students extra time whenever reading is included, either. Even in exams, where the dyslexic students might feel extra overwhelmed while making efforts to both understand what is written on the paper and meet the related expectations accordingly, the case should be the same so that they could show how much they have learnt (Nijakowska, 2010). For dyslexic students to learn their target language, being aware of their situation when it comes to reading and providing them with the needed exemptions might not be completely enough because neither it is the only symptom of dyslexia nor what these students only need is exemption (Fekih, 2019; Lama, 2019; Tobbi, 2020).

Another gap in the dyslexia knowledge of Turkish EFL teachers that needs to be mentioned is the fact that dyslexics have difficulty in phonological processing, which affects their phonological awareness, phonological memory, and rapid automatized naming (Kibby et al., 2014). Accordingly, what the participants were not aware of was about how the dyslexic students cannot not fully make sense of the phonological aspects of the input they are exposed to even if it is in their native language, which might, in

fact, say a lot about how challenging it must be for them to learn their target language. The reason behind this is that the road they take while going from input to intake is like a labyrinth; however, there is no map to follow. In that case, the dyslexics need traffic signs, which, in this context, are visuals, to be able to decipher where they are supposed to go and reach their destination successfully in the end. For the dyslexic students, input without visual support is just darkness. They need to see the shape of the information as a sample first so that they can remember how to cast it in the mould on their mind correctly later. Otherwise, their short-term memory breaks in and the input is easily forgotten (Cimermanová, 2015; Kormos and Smith, 2012). Again, without being aware of such an educational need of their dyslexic students, EFL teachers might not use the multisensory instruction method in their classroom and simply assume that they are lazy or even have an intelligence-based problem (Wormald, 2015; Kamala, 2014), which manifests itself in the high number of responses indicating their unsurety for the related item (i.e., Item 21).

While the majority of the Turkish EFL teachers participating in the current research were unsure of whether dyslexic students might have an intelligence problem, the reality is that it is the normal result of intelligence tests that identifies an individual as dyslexic. Hence, what was not known by the participants was that dyslexics have an intermediate or even higher level of intelligence. In that case, it could be deduced that there are individuals who are both dyslexic and gifted, contrary to what might be assumed by teachers, as the findings of the study conducted by Hornstra et al. (2010) suggested, as well. In spite of the participants' unawareness of them, dyslexia also offers various advantages to dyslexic individuals thanks to the way they use their brains differently (Eriş, 2021). Having difficulty in noticing the details of the input quickly, the dyslexics are quite successful at seeing the bigger picture and tackling issues from perspectives not everyone could think of (Eide and Eide, 2023), which enables them to stand out in activities based upon creativity, problem-solving and critical thinking skills such as brainstorming activities, roleplays, puzzles, etc. (Çolak and Yılmaz, 2023). However, apart from their lack of knowledge, teachers might also cause their dyslexic students to lose their confidence and motivation to participate in activities and demonstrate their strengths if they treat the students wrongly because of their misconceptions about dyslexia (Gibson and Kendall, 2010). In this current research, there was also misconception revealed because of the participants' responses.

5.1.1.3. Discussion on research question 1.3: To what extent do Turkish primary school EFL teachers have misconceptions about dyslexia?

Similar to the participants of the studies conducted by Şahin et al. (2020), and Fletcher and Currie (2011), the majority of the Turkish EFL teachers participating in the present research had the misconception that individuals with dyslexia had a vision problem resulting in the symptom of seeing letters and words backwards. Although it is a syndrome affecting individuals' reading skills, there is no defect of vision in the eyes of the dyslexics. Therefore, it is not treated with glasses prescribed by doctors. In fact, there is no medicine that could be prescribed for the treatment of dyslexia because it is not curable (Gray, 2008). Rather, with extra efforts such as individualized education programs and fluent reading practices supported with visuals, the dyslexic students could improve their reading, spelling, and phonological processing skills. However, neither English is included in the individualized education programs in primary schools of Türkiye nor Turkish EFL teachers are at a knowledge and experience level in terms of dyslexia and EFL teaching in a classroom with dyslexic students (Tosun et al., 2021). To minimize the misconceptions and mistreatments of EFL teachers towards their dyslexic students and maximize the feasibility and efficiency of the EFL education they could receive, it could be suggested that MoNE should provide in-service teacher training programs on dyslexia and EFL teachers should cooperate with their dyslexic students, the parents, and experts such as special education teachers and guidance counsellors in the school (2021).

To look back at the first half of the research questions of this study (i.e., RQ1, RQ1.1, RQ1.2, RQ1.3), the findings, which highlight substantial deficiencies in the dyslexia knowledge among Turkish primary school EFL teachers, can be attributed to several crucial factors. Similar to findings in research by Çoğaltay and Çetin (2020), Ertaş (2022), Kodan (2020), Şahin et al. (2020), and Ness and Southall (2010), the teachers' understanding of dyslexia appears to be confined mainly to its reading-related symptoms. This suggests that they may not have received thorough training covering the full scope of dyslexia, including its neurobiological basis and its effects on phonological processing. The lack of awareness regarding dyslexia's neurobiological roots, which influence how the brain processes reading, likely leads to confusion among teachers when they observe the varying reading abilities of dyslexic students. Many

teachers may not recognize that dyslexic students need extra time for reading tasks, both during regular classroom activities and exams, to meet their distinct learning requirements (Shaywitz, 2003; Nijakowska, 2010). Additionally, the participants' limited understanding of dyslexia's impact on phonological processing, which affects phonological awareness, memory, and rapid naming, indicates a broader lack of knowledge on how these challenges complicate language learning. This knowledge gap might cause teachers to miss the importance of incorporating multisensory instruction, which is vital for helping dyslexic students connect auditory input with visual stimuli and better retain information (Cimermanová, 2015; Kormos & Smith, 2012). Moreover, the participants' uncertainty about whether dyslexic students may have an intelligence problem reflects a fundamental misunderstanding of dyslexia, as individuals with dyslexia generally possess normal or above-average intelligence, with some being both dyslexic and gifted (Hornstra et al., 2010). Failing to recognize the strengths that often accompany dyslexia—such as creativity and strong problem-solving skills—could lead teachers to misjudge and demotivate their dyslexic students, further impeding their academic and personal development (Eide & Eide, 2023; Gibson & Kendall, 2010). These findings underscore the critical need for more comprehensive and targeted teacher training programs in Türkiye, to better equip educators with the knowledge and skills necessary to support the diverse needs of dyslexic students in their classrooms.

5.1.2. Discussion on research question 2.1: According to the views of Turkish primary school EFL teachers, are they provided any in-service training on dyslexia?

According to *Table 14*, demonstrating the responses of the participants for the related interview question (i.e., Question 6), it was understood that almost all of them were unanimous about not having been provided with an in-service training specifically on dyslexia, being in the same vein as the previous literature (Tosun et al., 2021; Fekih, 2019; Nijakowska, 2010). Only one mentioned that she attended a seminar on special education and dyslexia was included in the session at a conceptual level only, which might be considered as a missed opportunity as the information the teacher was provided with was limited to a quick definition of the syndrome. Based upon the related findings, it could be deduced that none of Turkish primary school EFL teachers taking part in the

present research have not received an in-service training on dyslexia yet because there is none apparently (Tosun et al., 2021). This indicates a considerable shortfall in professional development opportunities for EFL teachers, resulting in them being unprepared to effectively tackle the specific challenges that dyslexic students encounter when learning a foreign language. Thus, it could be suggested that MoNE should take into consideration the need for primary school EFL teachers to receive training on teaching methods and strategies for dyslexic EFL students depending on their language learning needs so that they could be find the driving force to make effort in learning their target language and make progress in this process (Erkan et al., 2012).

5.1.3. Discussion on research question 2.2: What kind of policies should be followed in the Turkish education system to facilitate foreign language education for both teachers and dyslexic students?

According to *Table 15*, demonstrating the responses of the participants for the related interview question (i.e., Question 7.1), it was noticed that the Turkish EFL teachers suggested in-service teacher training on dyslexia, interactive whiteboard applications, cooperation with specialists, pre-seminar on dyslexia for novice EFL teachers, a related course for every grade to raise both teachers and students' awareness of dyslexia, and public service ads on dyslexia in collaboration with MoNE. Considering the suggestions, it could be stated that half of them showed similarities with the previous literature (Nushi and Eshraghi, 2023; Tobbi, 2020; Indrarathne, 2019). In the same line as Nushi and Eshraghi (2023), the participants mostly emphasized how they had never realized the gap in the Turkish education system regarding the provision of trainings or sources specifically on the language education of students with learning differences while there was the estimation of having at least one dyslexic student in every classroom, and that they needed to be informed about what to do in the classroom to help the dyslexics develop their target language skills as easily as their peers. Considering their awareness of such a gap in the education system and the common suggestion upon it, it could be uttered that MoNE should fill this gap by providing primary school EFL teachers with in-service trainings on dyslexic students' language learning needs and suitable teaching methods for meeting them (Erkan et al., 2012; Tosun et al., 2021).

Another suggestion received from the participants was the interactive whiteboard applications that could support the dyslexic students in their target language learning process, which was different from the suggestions in the previous literature. Although some of the participants might think of such a suggestion stemming from their unsurety about the laziness and uninterest of dyslexic students during lessons (Wormald, 2015), it could in fact be a valid one as the dyslexics need multisensory instruction such as visual support to better process the input they are exposed to (Kamala, 2014). For that reason, applications providing subtitles alongside of video or audio recordings, interactive games letting the students experience by roleplaying or problem solving, etc. might be effective and motivative for them. Moreover, the teachers could also search on the internet or personally negotiate with their dyslexic students and include activities designed specifically for dyslexic students both to promote their involvement in the language learning process and raise the other students' awareness of dyslexia in the classroom (Çolak and Yılmaz, 2023). However, they do not seem to go beyond the objectives indicated in the curriculum developed for the primary school education due to several reasons.

One of the participants (P4) expressed during the interview that the Turkish education system somehow was restricting students to be monotype individuals as if they had no differences in their backgrounds or educational needs. Besides, according to the participant, teachers usually focus on meeting the objectives highlighted in the curriculum on time without having the chance to pay special attention to every single one of their students, which might also be one of the results of having crowded classrooms in state primary school in Türkiye. However, it could still be in MoNE's power to adjust the curriculum in a way to enhance the level of inclusiveness in education, which was also suggested in the previous literature with different contexts (Atar and Amir, 2023; Indrarathne, 2019; Lemperou et al., 2011; Nyikes, 2019; Ranaldi, 2003; Rontou, 2012). With the awareness of the impossibility in education students to be monotype individuals, MoNE could start by conducting a needs analysis with the participation of guidance counsellors and specialists such as special education teachers to broaden the scope of the primary school curriculum with alternative versions for different scenarios and enable EFL and other subject teachers to cooperate with them in the case of having or suspecting students with special educational needs in the classroom (Singleton, 2009).

As the participants of the present research were found to be highly unaware of dyslexia, the in-service primary school EFL teachers in Türkiye were suggested to be provided with trainings on the related topic by MoNE so that any obstacles could be prevented in the process of meeting the EFL learning needs of dyslexic students. However, focusing on the in-service ones only might not fill the gap in the education system in the long run (Tosun et al., 2021; White et al., 2020). In accordance with the suggestions received from some of the participants during the interview sessions, it could be offered that the trainings on dyslexia should start way before than that and way beyond than the teachers. To go into particulars, teaching reading and writing skills being one of the courses in the department of English Language Teaching should include how to teach those skills to students with learning differences so that the EFL teachers could start their career by already being knowledgeable of the basics at least (Cimermanová, 2015). Following that, when they become novice teachers, pre-seminar on dyslexia should be provided by MoNE so that they could brush upon their knowledge and get more and more ready and qualified to teach their dyslexic students in the optimum way (Çolak and Yılmaz, 2023). Nevertheless, this optimum way of teaching might not be adequate for the dyslexic students to learn if they are not motivated for it. After all, target language learning process is not limited to schools and teachers only (Indrarathne, 2019). The society's awareness of dyslexia also needs to be raised (Balci, 2019).

The feeling of being understood does wonders for the dyslexics because they are their own enemies when it comes to find the reason why they cannot learn at the expected pace (Gibson and Kendall, 2010; Kalsoom et al., 2020). The suggestion for one of the participants of the present research was the development of public service ads on dyslexia in collaboration with MoNE. Just like the ones on health matters, public service ads informing the society on dyslexia and other syndromes with special educational needs with tips for people regarding the lives of dyslexic individuals and how they need to be treated in different contexts might make life easier for the dyslexic students and enable them to feel more self-confident and motivated in the process of learning their target language. One side note is that not everyone might have the chance to know what dyslexia is until there is a family member, a relative or a friend diagnosed with it (Fekih, 2019). Thus, such public services to raise the awareness of the society might have a snowball effect and enable individuals to inform each other about the probable reason of the symptoms of their loved ones and what they should do for the diagnosis process

and after (Rontou, 2012). By that way, rather than going round in circles only by trying to fix the already existing problems in the education system, making the blackhole smaller and smaller by taking precautions with broader scopes might result in permanent solutions for the whole dyslexic community.

5.1.4. Discussion on research question 2.3: What kind of support should school administrations provide to facilitate foreign language education for both teachers and dyslexic students?

According to *Table 16*, demonstrating the responses of the participants for the related interview question (i.e., Question 7.2), it was realized that the Turkish EFL teachers suggested school administrations to provide dyslexia awareness campaigns (e.g., seminars, events, etc.), effective individualized education programs on English, dyslexia-friendly school libraries with audio books in English for each grade and to promote cooperation with special education teachers, dyslexic students and their families. Including individualized education programs in their suggestions in the same vein as the previous literature (Kirschner, 2015; Torgesen, 2000), the participants also emphasized that the related programs should be ‘effective’ for the target language learning process of dyslexic students, which could be interpreted as the result of both their reflection on themselves as EFL teachers who were found to be highly unaware of dyslexia and their realization of the way they themselves had never been provided with in-service training on the syndrome. They understood any individualized education programs on English provided right now would not be as effective as they should be for the dyslexic students since the EFL teachers have not been qualified with language teaching methods and materials suitable for them yet. For that reason, alongside of the teacher trainings on dyslexia, also suggested by them as a part of the policies to be followed in Turkish education system, the participants mostly believed the school administrations could facilitate EFL education for both teachers and dyslexic students by organizing dyslexia awareness campaigns such as seminars and events with the participation of specialists and dyslexic adults with successful language learning stories. Accordingly, such campaigns could be beneficial in two ways: They could help the EFL teachers be updated with recent developments on dyslexia and strategies in dyslexic EFL education as a backup for the trainings provided by MoNE at certain intervals. They

could also support the dyslexic students on a mental level. Feeling that they are seen and understood, the dyslexics could stop blaming themselves for their slow reading and learning (Gibson and Kendall, 2010; Kalsoom et al., 2020). Therefore, such campaigns could serve as a reminder for these students about the fact that they are already doing a great job by trying to learn an additional language despite the obstacles slowing them down even in their native one and encourage them to take firm steps toward success in their language learning journey (O'Brien, 2021).

What could also be a great reminder for the dyslexic students about their efforts in this journey is a school administration encouraging cooperation with EFL teachers, special education teachers, dyslexic students, and their families in their target language learning process according to some of the participants. On one side, there are dyslexic students and their parents who have witnessed all the ups and downs experienced by their dyslexic children both in their academic and daily lives and are aware of their weaknesses and strengths mostly, while on the other side, there are the special education teachers being expert at the education of students with special educational needs (Lama, 2019). In the case of cooperating with all of them, it could be easier for EFL teachers to know their dyslexic students, understand their situation and needs better, and try to find the optimum way to teach them their target language (Kirschner, 2015; Torgesen, 2000). From the viewpoint of the dyslexic students, they would again feel that they are valued and understood, which might enable them to find the intrinsic motivation to go on making efforts to learn their target language (Gibson and Kendall, 2010; Kalsoom et al., 2020). These students are not uninterested in learning their target language, but they could easily lose their motivation if their teachers do not notice that they are already trying and appreciate their efforts. The EFL teachers should understand that dyslexic students will always make progress in their language learning process at a different pace than their peers (Ewing and Parvez, 2012). With that awareness, the teachers should learn the stronger sides of their dyslexic students through cooperation with the parents and experts and adjust their teaching methods and strategies to make them more inclusive and effective for all the students in their classroom so that they could create an atmosphere where everybody could learn their target language rather than make the process more complicated than it already is (O'Connor, 2000; Singleton, 2009).

Being mentioned by only one participant (P11), the provision of a dyslexia-friendly library might be an effective implementation for both native and target language

development of dyslexic students, which was also a different suggestion compared to the previous literature. Being able to reach audiobooks in both Turkish and English alongside of their written versions in the school library could enable the dyslexics to decode and match how the input is uttered and written more easily and can enhance their phonological processing skills in the long run (Mesmer and Griffith, 2005). The audiobooks should also include the textbooks for each grade of the primary school so that the dyslexic students could revise what is taught in the classroom and catch up with their peers. Hence, having various sources in the school as a backup to practice and fill their gaps in the school could increase the motivation of the dyslexics (Erkan et al., 2012).

Dyslexia with a prevalence of 5% among primary-school students (Pan, 2023), which could be interpreted as frequent as one dyslexic student in every classroom, is a syndrome affecting students with high potential of success in language learning and lots of many other areas negatively and EFL teachers' lack of knowledge is one of the leading factors (Arapogianni, 2003; Constantopoulou, 2003; Fekih, 2019; Hornstra et al., 2010; Indrarathne, 2019; Tobbi, 2020). However, before discussing the gap in the EFL teachers' knowledge of dyslexia, the focus here should be on why that was the case. Taking the previous literature into consideration (Fekih, 2019; Lama, 2019; Nijakowska, 2010; Tosun et al., 2021), the first one could be that national education systems are not developed by taking into consideration the educational needs of dyslexic students. Unfortunately, there is a big gap both in the primary school curriculum and in-service teaching training programs provided by MoNe when it comes to the EFL education of such students. On the other hand, the second reason could be explained by the gap in teacher education. Accordingly, it is possible to encounter the concept of dyslexia under one descriptive course named Special Education in the department of English Language Teaching (Atar et al., 2021). However, apart from this limited scope, the department has not included the syndrome in the syllabi of its pedagogical courses yet. To exemplify, pre-service EFL teachers should have been provided with how to teach EFL to dyslexic students under the course "Teaching Reading and Writing Skills" as it focuses on the very skills dyslexics have difficulty in succeeding even in their native language from pedagogical aspects (Eide and Eide, 2023; Shaywitz, 2003). , Unfortunately, all those cause EFL teachers to have little to no idea about what even dyslexia is, let alone how they could teach English to dyslexic students (Arapogianni,

2003; Constantopoulou, 2003; Fekih, 2019; Hornstra et al., 2010; Indrarathne, 2019; Tobbi, 2020).

On the top of that, English is not a part of the available individualized educational programs implemented in the primary schools of Türkiye, which leaves the dyslexic students on their own in their target language learning process (Sarı et al., 2020). That being the case, individuals with dyslexia fear participating in classroom activities because they believe that their peers will laugh at their mistakes and think that they are stupid (Soğancı and Kulesza, 2023). Teachers should know that dyslexic students are neither that nor lazy (Gwernan-Jones and Burden, 2009). They just need more time to complete tasks compared to their peers. Their brains work differently, and it is not their fault that some tasks might take longer for them than expected (Shaywitz, 2003). They need understanding. They need to feel that their situation is validated and understood. They need to hear that there is nothing wrong with learning at their own pace rather than being forced to be a part of the “standard” pattern (Eide and Eide, 2023). It is not sometimes good to treat every student in the same way because they might have individual differences preventing them from being successful at the mainstreaming education (Kirschner, 2015; Torgesen, 2000). While they are already aware of that they need to make more effort and devote more of their time to learn their target language, being understandable and offering them easier ways and methods to reach success should not be unfair for non-dyslexic peers or time-consuming for teachers (Kooij, 2013; Nijakowska et al., 2018; Lama, 2019). Hence, for EFL teachers to be educated about dyslexia and provide their dyslexic students with EFL education in the optimum way, both MoNE and departments of English Language Teaching should adjust their policies by taking into consideration the existence of dyslexia (Erkan et al., 2012). The fact that their learning process takes longer than expected does not mean it never reaches success (Eriş, 2021). It just takes time and that needs to be seen and understood in the field of education (Eide and Eide, 2023; Nijakowska, 2019; Shaywitz, 2003), including EFL, so that necessary steps could be taken without sacrificing any individuals just because of neglect and unawareness (Fekih, 2019; Indrarathne, 2019; Tobbi, 2020).

To think back and reexamine the responses that were obtained for the second half of the research questions (i.e., RQ2, RQ2.1, RQ2.2, RQ2.3), it could be construed that the curtain covering both the obvious gap in the dyslexic EFL education in Türkiye and ways to start from somewhere for a better future in the EFL education journey of Turkish

dyslexic students has been lifted to a certain degree. First of all, nearly all the participants unanimously reported not receiving any in-service training specifically focused on dyslexia, a trend consistent with previous research (Tosun et al., 2021; Fekih, 2019; Nijakowska, 2010). The lack of such training could be attributed to the apparent absence of specialized programs or initiatives within the Turkish education system, particularly for primary school EFL teachers.

Proceeding to the suggestions of the participants on the relevant issue from the aspect of the education system, they advocated for several improvements, including in-service training on dyslexia, the use of interactive whiteboard applications, collaboration with specialists, and the creation of dyslexia-focused courses and public awareness campaigns. These suggestions reflect an understanding of the complex challenges dyslexic students face in learning a foreign language. However, they also indicate that EFL teachers feel inadequately prepared to address these challenges due to insufficient training and resources provided by the MoNE. The call for enhanced in-service training and curriculum adjustments, for instance, highlights the necessity for systemic reforms to promote inclusivity and provide specialized support for educators. Additionally, the proposal for public service ads emphasizes the role of societal awareness in supporting dyslexic individuals, suggesting that educational improvements alone are not sufficient.

As for their suggestions on the filling in the gap in the dyslexic EFL education from the aspect of school administrations, the Turkish EFL teachers came up with another set of ideas such as implementing dyslexia awareness campaigns, developing individualized education programs, establishing dyslexia-friendly school libraries, and fostering greater collaboration with specialists and families. These suggestions underscore an awareness of significant deficiencies in the current support structures and a push for more effective solutions. Specifically, the call for individualized education programs reveals concerns that existing approaches are insufficiently tailored to the unique needs of dyslexic students, a situation exacerbated by teachers' limited specialized training. This lack of expertise stems from inadequate professional development and the minimal emphasis on dyslexia within existing educational training and curricula. The focus on awareness campaigns and specialist collaboration indicates that teachers feel unprepared to address dyslexia adequately and view these measures as essential for enhancing their own understanding and the support they provide. Additionally, the proposal for dyslexia-friendly libraries highlights the need for resources that support both native and

target language development, acknowledging the specific challenges faced by dyslexic students.

Overall, these findings expose issues within the education system, including gaps in targeted training, resources, and curriculum adjustments, which hinder teachers' ability to effectively support dyslexic students. The results emphasize the urgent need for comprehensive reforms to better equip educators and improve the educational environment for dyslexic students. To effectively address these issues, MoNE must implement substantial changes in teacher training, curriculum development, and public awareness efforts. Without these measures, dyslexic students in Türkiye are likely to continue encountering unnecessary obstacles in their educational experiences.

5.2. Conclusion

The present research, which adopted an explanatory mixed methods research design, investigated the extent to which Turkish primary school EFL teachers knew dyslexia and how to teach dyslexic EFL students in inclusive classrooms, to identify the points they were not aware of and misinformed, and to come up with the possible reasons for the gap in their knowledge. Accordingly, the KBDDS Scale developed by Soriano-Ferrer and Echegaray-Bengoa (2014) and a structured one-on-one interview were used as data collection tools. Obtaining the frequency distributions of the data through SPSS 26 and manual coding, the research was completed with the following conclusions:

- The dyslexia awareness level of the participants was low.
- The participants had limited knowledge of the relation between dyslexia and reading skills.
- They had no knowledge of the details such as the prevalence of dyslexia, its effect on phonological processing and dyslexic individuals' self-confidence, being hereditary and incurable as some of its characteristics, or how to teach EFL to dyslexic students, etc.
- They had misconceptions of dyslexia, resulting in the visual perception of reversed or mirrored letters and words.
- They were aware of the gap in their knowledge of dyslexia.

- They came up with suggestions for the Turkish education system, such as in-service teacher training, interactive whiteboard applications considering the educational needs of dyslexic students, cooperation with specialists, pre-seminar for novice EFL teachers, public service ads on dyslexia in collaboration with MoNE, and dyslexia-friendly textbooks (e.g., supported with audio and visuals).
- They also suggested dyslexia awareness campaigns (e.g., seminars, events, etc.), effective individualized education programs on English, EFL teachers' cooperation with special education teachers, dyslexic students and their families, and dyslexia-friendly libraries for school administrations.
- The reasons behind the gap in the primary school EFL teachers' knowledge of dyslexia were implied to be the lack of training on dyslexia provided for pre-service and in-service EFL teachers.

Taking into consideration the related conclusions of the present research, it could be noticed that they mostly demonstrated similarities with the previous literature (e.g., Alahmadi and El Keshky, 2019; Arapogianni, 2003; Constantopoulou, 2003; Dada and Sulyman, 2021; Fekih, 2019; Hornstra et al., 2010; Indrarathne, 2019; Kodan, 2020; Ness and Southall, 2010; Tobbi, 2020). On the other hand, they also differed with the variety of suggestions provided by the participants (e.g., dyslexia-friendly library, public service ads on dyslexia in collaboration with MoNE, etc.).

In light of all those, it could be implied that the research findings reveal critical shortcomings in the Turkish education system's approach to supporting dyslexic students. The study indicates that Turkish primary school EFL teachers generally have a poor understanding of dyslexia, including its effects on reading skills, phonological processing, and the specific needs of dyslexic learners. This issue is exacerbated by prevalent misconceptions and a lack of specialized training for both pre-service and in-service teachers. To address these deficiencies, the research calls for significant reforms within the education system. Recommended actions include incorporating dyslexia education into tertiary teacher training programs, providing focused in-service training, and updating curricula to offer individualized education programs for dyslexic students. Furthermore, the study advocates for the introduction of dyslexia awareness campaigns, the creation of dyslexia-friendly school libraries, and enhanced collaboration between EFL teachers, special education professionals, dyslexic students, and their families. These measures are designed to foster a more inclusive educational environment, where

dyslexic students can be better supported and encouraged to utilize their strengths, ultimately improving their language learning outcomes. Implementing these reforms could lead to substantial improvements in the educational experiences and achievements of dyslexic students in Türkiye and dyslexics students might receive their EFL education in a system where they are seen, understood, and accepted with their unique way of learning in the near future.

Being a dyslexic has its strengths as well as weaknesses, and adjusting the policies of the education system depending on their learning differences and educational needs would help them use these strengths to take firm steps forward to success in their EFL learning process instead of feeling left under the burden of all the efforts hidden. As Ghazi Mustafa Kemal Atatürk, the founder of the Republic of Türkiye, once specified: There is no individual to be sacrificed in education.

5.3. Limitations and suggestions for further research

The present research faced several limitations in its sample and setting, data collection tools, and data collection procedure. To be specific, the study's focus on Turkish primary school EFL teachers from only five cities in the Marmara Region may not have fully captured the diverse responses of EFL teachers in different contexts across Türkiye, potentially limiting the generalizability of the findings to other regions or the entire country. Additionally, the use of a single three-point scale and a structured interview for data collection, while insightful, may have restricted the depth and breadth of responses. The scale's limited response options and the structured nature of the interview could have constrained the range of information gathered compared to more open-ended approaches. Moreover, the online data collection method may have excluded participants who are less familiar with digital tools or have limited internet access, possibly introducing selection bias. To overcome the limitations found in the current study, future research should aim to broaden its geographic reach and sample size to better represent the diverse EFL teaching contexts throughout Türkiye. Including teachers from a wider range of regions and educational environments would improve the applicability of the findings across different settings. Researchers should also utilize a variety of data collection methods, such as open-ended surveys and interviews, to gain

a deeper and more nuanced understanding of teachers' perceptions and knowledge about dyslexia. Additionally, to address potential biases from online data collection, future studies might consider using alternative methods such as in-person surveys or hybrid approaches to ensure the inclusion of participants with varying levels of digital skills and internet access. By addressing these considerations, future research could produce more comprehensive and representative findings, ultimately leading to more effective strategies for supporting dyslexic students across diverse educational settings in the Turkish context.



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APPENDICES

Appendix A. The knowledge and beliefs about developmental dyslexia scale (KBDDS)

KNOWLEDGE AND BELIEFS ABOUT DEVELOPMENTAL DYSLEXIA SCALE (KBDDS)

Dear Participant, this scale form is used in the master's thesis research, titled as *Dyslexia in English Language Education: A Study on Primary School EFL Teachers' Awareness of Dyslexia*, conducted under the supervision of Assoc. Prof. Dr. Cihat Atar, at Sakarya University, Institute of Educational Sciences, Department of English Language Education. It is a mixed-methods research on primary school EFL (English as a foreign language) teachers' awareness of developmental dyslexia with the aim of measuring the extent to which the primary school EFL teachers have knowledge of dyslexia, detect the points they have comparably less knowledgeable about, and unveil the reasons behind them. Thanks to your valuable participation to this research, it might contribute to the related literature with further implications and another step could be taken on the way up the stair of enabling all Turkish EFL students to learn their foreign language under equal and sufficient conditions. The data collection procedure of this study commences with the "Scale of Knowledge and Beliefs about Developmental Dyslexia" developed by Soriano-Ferrer and Echegaray-Bengoa (2014, pp. 206), and you are only expected to take part in the scale at this stage. In the sequel, it will continue with one-on-one semi-structured interviews for more in-depth discussion of the research items. Your participation in this study is completely voluntary and your confidential data will be used for research purposes only. The scale expected from participants to complete is assumed to take up to 10 minutes. By means of the data collected with the help of your responses in the "Scale of Knowledge and Beliefs about Developmental Dyslexia", the study can offer new insights into the field on reliable bases. For this reason, it is beyond significant that you reflect your knowledge and beliefs about dyslexia and dyslexic learners honestly. If you would like to participate in this study, you can begin with putting a check mark on the option "Yes, I agree to take part in this research" of the following question. By doing so, you will approve the invitation to take part in the study

voluntarily. You may decide to withdraw at any time for any reason. Thank you in advance for being voluntary to take part in this journey. Your time, consideration, and responses are greatly appreciated. In the case of having any questions, you are always welcome to contact me.

Lale Gökçe GENÇ

E-mail: lale.genc1@ogr.sakarya.edu.tr

• Do you agree to take part in this research?

O Yes, I agree to take part in this research.

O No, I do not agree to take part in this research.



Part I. Demographic Information

The following questions are to measure the demographic information of the participant. You are expected to mark or indicate the appropriate answer.

1. Age: () 18-23 () 24-29 () 30-35 () 36-41 () 42-47 () 48-53 () 54-59 () 60 and above
2. Gender: () Female () Male
3. Educational Status () Bachelor's Degree () Master's Degree () Doctoral Degree
4. The department you graduated from: () English Language Teaching () English Literature () Other (please specify)
.....
5. Any course or training experience on dyslexia? () Yes (please specify)
..... () No
6. Teaching Experience: () less than 1 year () 1-5 years () 6-10 years () 11-15 years () 16-20 years () 21 years and above
7. The school you are currently working at is in... : () Balıkesir () Bursa () İstanbul () Kocaeli () Sakarya

Part II. Knowledge and Beliefs about Developmental Dyslexia Scale (KBDDS)

In the following “Knowledge and Beliefs about Developmental Dyslexia Scale”, developed by Soriano-Ferrer and Echegaray-Bengoa (2014, pp. 206), you will be dealing with items consisting of statements about dyslexia and dyslexic students. Based on your pure knowledge and beliefs about them, I would like you to choose one of the options “True”, “False”, and “Do Not Know” for each statement. Your responses will completely be confidential, and you always have the right to withdraw at any time for any reason. Your data will only and solely be used for research purposes. It is assumed that the completion of the scale will take up to 10 minutes. Please keep in mind that your responses will affect the reliability of the whole study. Thank you for your time in advance.

No	Item	True	False	Do Not Know
1	Dyslexia is a neurologically based disorder.			
2	Dyslexia is caused by visual perception deficits resulting in reversals of letters and words.			
3	A child can be dyslexic and gifted.			
4	Most children with dyslexia usually have emotional and/or social problems			
5	The brains of people with dyslexia are different from those of people without dyslexia.			

- 6 Dyslexia is hereditary.
- 7 Most studies indicate that about 5 % of school-age students have dyslexia.
- 8 Dyslexia is more frequent in males than in females.
- 9 Generally, children with dyslexia have problems with phonological awareness (e.g., the ability to hear and manipulate sounds in language).
- 10 Modelling fluent reading is often used as a teaching technique.
- 11 People with dyslexia have below-average intelligence.
- 12 Students with dyslexia often read with inaccuracy and lack of fluency.
- 13 Reversing letters and words is the main characteristic of dyslexia.
- 14 Difficulty with phonological processing of information is one of the major deficits found in dyslexia.
- 15 Intelligence tests are useful in identifying dyslexia.
- 16 All poor readers have dyslexia.
- 17 Children with dyslexia can be helped by using colored lenses/colored overlays.
- 18 Physicians can prescribe medications to help students with dyslexia.
- 19 Multisensory instruction has been shown to be an ineffective teaching method for treating dyslexia.
- 20 Students who have reading disabilities without an apparent cause (e.g., intellectual disabilities, absenteeism, inadequate instruction, etc.) are referred to as dyslexic.
- 21 Children with dyslexia are not stupid or lazy. Being knowledgeable about dyslexia can help them.
- 22 Giving students with dyslexia accommodations, such as extra time on tasks, shorter spelling lists, special seating close to the teacher, etc., is unfair to other students.
- 23 Intervention programs that emphasize phonological aspects of language with letters as visual support are effective for students with dyslexia.
- 24 Most teachers receive specific training to work with dyslexic children.
- 25 I think dyslexia is a myth, a problem that does not really exist.
- 26 Techniques involving repeated reading of material (e.g., words, sentences, or texts) help to improve reading fluency.
- 27 Problems in establishing laterality (body schema) are the cause of dyslexia.

- 28 Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.
 - 29 Dyslexia refers to a relatively chronic condition that is usually cannot be completely overcome.
 - 30 Many students with dyslexia continue to have reading problems as adults.
 - 31 Many students with dyslexia have low self -esteem.
 - 32 Children with dyslexia have problems with decoding and spelling, but not with listening comprehension.
 - 33 Applying an individual reading test is essential in diagnosing dyslexia.
 - 34 Children with dyslexia generally tend to be poor spellers.
 - 35 Dyslexia usually lasts a long time.
 - 36 Dyslexia is characterized by difficulties in learning to read fluently.
-

Appendix B. Interview questions.

INTERVIEW QUESTIONS

1. What is dyslexia? Could you please talk about the characteristics of a dyslexic individual?
2. How do you know/detect that there is a dyslexic student in your class?
3. Have you ever had a dyslexic student? If yes, have you encounter any difficulties in the process of teaching English to your student?
4. What teaching methods do/would you apply to your dyslexic student?
5. Did you take a course on dyslexia during your bachelor's degree program?
6. Have you ever been provided any in-service training on dyslexia throughout your teaching career?
7. In your opinion, what kind of policies should be followed in the education system in order to facilitate foreign language education for both teachers and dyslexic students? What kind of support should the school administration provide?

CURRICULUM VITAE

Name-Surname: Lale Gökçe GENÇ	
Education	
Bachelor's Degree	
University	Sakarya University
Faculty	Faculty of Education
Department	Foreign Language Education
Master's Degree	
University	Sakarya University
Institute	Institute of Education
Department	Foreign Language Education
Program	English Language Teaching
Scientific Publications	
1. Genç, L. G., and Atar, C. (2022). The use of display and referential questions in the Turkish EFL classroom context. In H. Bağcı, C. Atar and Ö. Aslan Bağcı (Eds.) <i>Recent Trends, Applications, and Suggestions in Education</i> (pp. 5-16). Eğitim Yayınevi. 2. Genç, L. G., and Atar, C. (2022). A discourse analysis of formal links used in English texts in national high school entrance exams. <i>Sakarya University Journal of Education</i>, 12(3), 769-787. doi: 10.19126/suje.1187502 3. Genç, L. G., and Meral, S. (2020). Evaluation of an English course book in Turkey based upon sociolinguistic aspects. <i>PESA Uluslararası Sosyal Araştırmalar Dergisi</i>. 6(2), 171-181. doi: 10.25272/j.2149-8385.2020.6.2.07	