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J. J. Strossmayer University of Osijek

Faculty of Humanities and Social Sciences

Study Programme: Double Major MA Study Programme in English Language
and Literature and German Language and Literature –
Teaching English as a Foreign Language

Nikolina Đogaš

**Dyslexia in the EFL classroom: Croatian EFL Pre-Service and In-Service
Teachers' Attitudes and Competences**

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Supervisor: Draženka Molnar, Assistant Professor

Osijek, 2023

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Abstract

Teaching students with learning difficulties can be very challenging. As nowadays learning difficulties are not so uncommon, it is important for teachers to be fully equipped with both theoretical and practical knowledge. Dyslexia is one of the most common specific learning difficulties which includes not only reading and writing difficulties, but also difficulties in phonological awareness, verbal memory, and verbal processing speed. Due to the nature of these problems, foreign language learning can be especially challenging for students with dyslexia.

This study was conducted to explore whether Croatian pre- and in-service teachers of English as a foreign language are competent enough to teach students with dyslexia and what attitudes they have about dyslexia and about teaching approaches and adjustments. In total 113 participants took part in this research. The participants were graduate students of English language and literature from the Faculty of Humanities and Social Sciences in Osijek and primary school EFL teachers from all over Croatia.

The results showed that pre- and in-service teachers have moderately good knowledge about dyslexia and that they have quite positive attitudes towards dyslexia and teaching approaches and adaptations. Still, the results also indicated insufficient training and quite low self-esteem in terms of teaching students with dyslexia after graduating from university. Consequently, a large number of participants want to further improve their competences when it comes to dyslexia as a specific learning difficulty.

Key words: dyslexia, knowledge, attitudes, teaching approaches, competences

Sažetak

Poučavanje učenika s poteškoćama u učenju može biti prilično izazovno. S obzirom na to da u današnje vrijeme poteškoće u učenju i nisu toliko rijetke, važno je da nastavnici steknu što bolje kompetencije za rad s učenicima s poteškoćama u učenju. Disleksija je jedna od najčešćih poteškoća u učenju koja uključuje ne samo poteškoće u čitanju i pisanju nego i probleme u područjima fonologije, verbalnog pamćenja i brzine u verbalnoj obradi. S obzirom na prirodu ovih teškoća i činjenicu da se strani jezik dosta razlikuje od materinskoga, za pretpostaviti je da učenicima s disleksijom učenje stranih jezika može predstavljati veliki izazov.

Ovo istraživanje provedeno je kako bi se istražilo posjeduju li budući i trenutni nastavnici engleskog kao stranog jezika u Hrvatskoj dovoljno dobre kompetencije za podučavanje učenika s disleksijom. Također, istraživalo se i kakve stavove sudionici imaju prema disleksiji i određenim pristupima poučavanju i prilagodbama u nastavi. Istraživanje je provedeno na uzorku od 113 ispitanika. U istraživanju su sudjelovali studenti diplomskog studija engleskog jezika i književnosti sa Filozofskog fakulteta u Osijeku i nastavnici engleskog kao stranog jezika koji su zaposleni u osnovnim školama diljem Hrvatske.

Rezultati su pokazali da budući i sadašnji nastavnici raspolažu prosječnim znanjem činjenica o disleksiji te da imaju pozitivne stavove prema disleksiji, različitim pristupima u poučavanju kao i prilagodbama. Međutim, rezultati su također ukazali na još uvijek nedovoljno kvalitetnu stručnu izobrazbu te na izrazito loše samopouzdanje sudionika kada se radi o samoprocjeni kompetencija ili osjećaju spremnosti za podučavanje učenika s disleksijom nakon završetka fakulteta. Kao rezultat navedenoga, veliki broj sudionika želi dodatno unaprijediti svoje kompetencije u području disleksije kao specifične teškoće u učenju.

Ključne riječi: disleksija, znanje, stavovi, pristupi poučavanju, kompetencije

IZJAVA

Izjavljujem s punom materijalnom i moralnom odgovornošću da sam ovaj rad samostalno napravio te da u njemu nema kopiranih ili prepisanih dijelova teksta tuđih radova, a da nisu označeni kao citati s napisanim izvorom odakle su preneseni. Svojim vlastoručnim potpisom potvrđujem da sam suglasan da Filozofski fakultet Osijek trajno pohrani i javno objavi ovaj moj rad u internetskoj bazi završnih i diplomskih radova knjižnice Filozofskog fakulteta Osijek, knjižnice Sveučilišta Josipa Jurja Strossmayera u Osijeku i Nacionalne i sveučilišne knjižnice u Zagrebu

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1. Introduction

Nowadays, primary education has become inevitable in many countries. During the first years of primary education, students are required to learn how to read, write and calculate. While majority of students have no problems with acquiring these skills, others may experience minor difficulties that they usually overcome over time. Occasionally, and more frequently over the years, a small number of students may encounter great difficulties with mastering the above mentioned skills. These difficulties might be caused by learning disabilities. According to the Learning Disabilities Association of America (LDA), “learning disabilities are due to genetic and/or neurobiological factors that alter brain functioning in a manner which affects one or more cognitive processes related to learning” (Learning Disabilities Association of America, n.d.). Students with learning disabilities can have problems not only with writing, reading or math, but also with some more complex skills such as time planning, organization, memory, attention, and abstract reasoning (Learning Disabilities Association of America, n.d.). Disabilities as for example dyslexia, dysgraphia and dyscalculia belong to the group of specific learning disabilities.

According to the European Dyslexia Association (EDA), dyslexia is the most common learning disability, which encompasses around 9-12 percent of the world population. (European Dyslexia Association, 2020). Dyslexia is a learning difficulty primarily associated with difficulties in writing and reading. However, dyslexia may occur with one or even more other disabilities (e.g., dysgraphia, dyscalculia, ADHD, dyspraxia ...). In these cases, students have even more problems in the process of learning and achieving good academic results.

Teachers' role in discovering students' learning difficulties, as well as assuming responsibility for their gradual progress and better academic accomplishments, is of most importance. Given that mastering the differences between mother tongue and foreign language is often difficult even for students without reading and writing difficulties, one can only assume how difficult and challenging it can be for students with dyslexia. This is exactly why it is important for teachers to acquire knowledge and competences for teaching dyslexic students during their own education.

This master thesis deals with dyslexia in the EFL classroom. The thesis consists of the theoretical and the analytical part. The theoretical part begins by describing dyslexia as a learning disability. It

covers different definitions of dyslexia, and the topic of identifying dyslexia. It proceeds with discussing how dyslexia affects both English language learning and English language teaching. At the end of the theoretical part comes an overview of similar researches conducted in Croatia and worldwide. The second part of this paper presents research focused on examining participants' general knowledge about dyslexia, their attitudes towards dyslexia and teaching adjustments which might be helpful when teaching students with dyslexia. The participants' education and feeling of preparedness to teach students with dyslexia are also investigated.

2. Dyslexia as a Learning Difficulty

2.1. Definition of Dyslexia

Dyslexia is mainly characterized as a difficulty in reading and writing, but there are also other problems people with dyslexia experience. Despite dyslexia being a topic of numerous research, (Fišer, 2019; Lenček, 2012; Nijakowska et al, 2018; Roitsch & Watson, 2019) it is still ambiguous and there is still no universal definition to be found. Therefore, it is very difficult to choose one definition that covers everything dyslexia encompasses.

2.1.1. Word Origin

“The name dyslexia is derived from the Greek word 'dys' which means weak, bad, inappropriate, and 'lexis' which means word, vocabulary, speech” (Bošnjak Terzić, 2015, p. 193). According to Philip Kirby, the term dyslexia was coined by a German ophthalmologist and professor Rudolf Berlin (1833-1897). While observing some of his grown-up patients faced with the difficulties in reading the printed word, he noticed that these difficulties were not caused by their vision but speculated that these were caused by some physical change in the brain (Kirby, 2018). According to Kirby (2018), Berlin himself had been influenced by another German Professor of Medicine, named Adolph Kussmaul. He was the

first person to identify the difficulties Berlin described, in 1877, and he labelled them "word blindness".

2.1.2. Terminological Variations

Apart from the German researchers Berlin and Kussmaul, several British practitioners - Hinshelwood, Kerr and Pringle Morgan (as cited in Kirby, 2018) - became interested in the subject. As they included children in their study, they put a question mark to the then favored belief that dyslexia was a disease or that it was caused by some brain injuries. They introduced a new point of view claiming that dyslexia can be congenital, but also developmental. Over time, dyslexia as the topic was extensively researched not only in Germany and United Kingdom, but in the United States as well. One of the most prominent researchers in the United States of America was Samuel T. Orton (as cited in Kirby, 2018), who believed that reading difficulties were caused by the lack of cerebral dominance. This theory was incorrect but was also a huge step ahead in making important theories about developmental dyslexia .

Due to the numerous unknowns about dyslexia and its cause, there is no universally accepted definition that would satisfy all needs. According to Critchley (1970), after many studies and hypotheses, the World Federation of Neurology established one of the earliest definitions of the term dyslexia in 1968: “[Dyslexia is] a disorder manifested by difficulties in mastering reading despite conventional instruction, adequate intelligence, and socio-cultural opportunities. It depends on underlying cognitive difficulties that are often constitutional in origin” (as cited in Fišer, 2019, p. 5). This definition was severely criticized by many researchers. Critchley and Critchley (1978) confirmed that dyslexia is cognitive in nature but also added that it is often genetically determined. They pointed out the fact that intellectual deficits, socio-cultural opportunities, and teaching approaches have nothing to do with the cause of dyslexia. According to them dyslexia is most likely a specific developmental disorder that is a lifelong problem, which can be partially reduced with timely and aimed help as the years go by (as cited in Bošnjak Terzić, 2015). Later, in 2002, the International Dyslexia Association published another greatly accepted definition:

Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling

and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge (International Dyslexia Association, 2002, Definition of Dyslexia).

While defining dyslexia, International Dyslexia Association (IDA) puts the focus on reading, but also mentions other affected language skills such as decoding abilities, spelling, and word pronunciation (International Dyslexia Association, 2020). Kormos and Smith (2012) did not consider the definition accurate, and they criticized its lack of proper interpretation regarding neurobiological characteristics of dyslexic children. They disagreed with the fact that dyslexia was presented as a difficulty rather than a difference in learning (as cited in Fišer, 2019). Complying with the previous definitions, Roitsch and Watson describe “dyslexia [a]s a neurobiological, developmental, language-based learning disability that affects individuals’ ability to learn to read (accuracy and fluency) and the development of spelling skills” (Roitsch & Watson, 2019, p. 81).

Although the focus is mostly on reading and writing skills, some other problems occur when it comes to people with dyslexia, and these should also be considered. A more extensive definition of dyslexia was given by Jim Rose in 2009, and his definition was adopted by the British Dyslexia Association. Except difficulties in reading and spelling, Rose mentions other characteristics of dyslexia such as difficulties in phonological awareness, verbal memory, and verbal processing pace. He also mentions additional features which might occur but do not define dyslexia. These are for example difficulties in motor co-ordination, mental calculation, concentration, and personal organization (British Dyslexia Association, 2010). Lenček also points out some of the co-occurring features of dyslexia mentioned above, but also provides some other such as difficulties related to visual processing, memory, sequential difficulties, and perceptual difficulties of an auditory or visual nature (Lenček, 2012). Moreover, according to Rose (2009) “[i]t is best thought of as a continuum, not a distinct category, and there are no clear cut-off points” (as cited in BDA, 2010).

Considering all of the above, it is clear that dyslexia greatly affects everyday life, including the learning and work context. However, the nature of the difficulties associated with dyslexia is quite versatile and not necessarily shared by all the individuals. According to the British Dyslexia Association, (BDA, n.d.), the manifestation of dyslexia can range from mild to severe. In some more

severe cases, dyslexia can be accompanied by other learning difficulties (dysgraphia, dyscalculia, ADHD...) (BDA, n.d.), while in some milder cases it can be hard to recognize. Smythe (2000) argued that the manifestation of dyslexia in any dyslexic will depend upon not only individual cognitive differences, but also the language used.

Despite the fact that dyslexia is often associated with negative descriptions such as problems, disabilities and difficulties, there are also positive sides to dyslexia. Dyslexia does not have anything to do with intelligence or intellectual abilities (Cimermanová, 2015). Dyslexic people are often talented in fields such as reasoning and in visual and creative areas (British Dyslexia Association, 2010).

2.2. Identifying Dyslexia

There is no exact cause of dyslexia, nor is there a universal test that could be used to test a person for dyslexia. Raid (2003) states that there are various tests that are intended to help identify dyslexia, but they certainly cannot be the only proof that a person is dyslexic (as cited in Lenček, 2012). Identifying and diagnosing dyslexia is a rather complex process, and existing tests make only a part of that process and evaluation. Also, these tests cannot simply be translated and used in all languages. Each language is unique and therefore causes different difficulties for people with dyslexia. It is important that tests are selected and adapted to each language depending on its features (Fišer, 2019; Lenček, 2012). Due to the absence of a universal test and/or a specific way of diagnosing dyslexia, recognizing the indicators of dyslexia is crucial.

Roitsch and Watson (2019) recognized difficulty with the acquisition of reading as the most proven indicator of dyslexia and suggested the following:

Early identification of children at risk for reading difficulties may help assess and address this condition as soon and as optimally as possible. Because dyslexia is a specific learning disability in word reading and spelling (written language) characterized by impairments in verbal working memory, assessment measures of word reading (i.e., real words and pseudo words), spelling, and working memory are necessary for the identification of individuals with dyslexia. (p. 83)

In addition to the above, there are many more indicators of dyslexia, but as mentioned earlier in the paper, difficulties in reading and writing are the most common and prominent. Contrary to popular belief, the core indicator of dyslexia is *not* reversing letters; rather it is a difficulty interpreting the sound (phonological) components of our language. In addition to the phonological aspect of dyslexia, people with dyslexia may struggle with rapid letter and word recall, referred to as rapid automatic naming (RAN). Difficulties with RAN and fluent/effortless reading can influence reading comprehension.

Regardless of the fact that dyslexia is incurable, there are many other authors who also believe that the early recognition and intervention are essential for the progress of dyslexic students in education (Fišer, 2017; Croatian Dyslexia Association). Croatian Dyslexia Association states that it is extremely important to detect dyslexia as early as possible and to take immediate action. Children with dyslexia require professional assistance and support from their parents, schools, and their environment. Any delay makes the resolution of the issue harder and creates a backlog in their ability to follow school material. If dyslexia is not detected, the child experiences discouragement and tiredness, while parents and the school struggle to understand the problem, and by doing so cause additional mental stress to the child. With the years, their difficulties become deeply rooted, their fears intensify, their relationship with the environment becomes worse, and it becomes hard to provide them with the necessary help (CDA, n.d.).

However, there is no clear-cut answer to the question of when dyslexia can be recognized and diagnosed at the earliest. Some authors state that dyslexia can be recognized and diagnosed already in kindergarten, while others claim that it can only be diagnosed at school age. Fišer (2017) claims that “observation of children who are at risk of developing a learning difficulty usually takes place during their first year of schooling” (p. 70). Lenček et al. (2007) reveal that some traditional views believe that dyslexia can only be diagnosed if a student's reading skill is at the level which other students achieved two years ago. Therefore, students could receive a diagnosis of dyslexia only in the third grade of primary school. On the other hand, some authors (Reid, 2000; Snowling, 2001) believe that even when testing children at the age of five, differences in the results of tasks that check motor, visual and language functioning can be noticed, and that these results can indicate dyslexia (as cited in Lenček et al. 2007). In Croatia, the identification of dyslexia mainly occurs at school age and is based

on determining the level of reading and writing skills as well as on abilities that include understanding and learning through given reading materials (Lenček, 2012).

Croatian Dyslexia Association mentions that in Croatia, there is no systematic observation of children of preschool and school age that could enable monitoring of difficulties in reading or writing, which could also signal that the learner might have dyslexia. Very often, only after the recognition of signs by teachers or parents, further assessment of the student by experts follows. A certain number of parents might notice that their child is not achieving the expected level of several skills, but most of them will not be able to connect the symptoms with the cause. Thus, a great responsibility falls on teachers who are expected to know how to recognize dyslexia and who should know how to approach and work with students with dyslexia. In addition, teachers are also expected to inform parents as well as professional associates about the existing indicators, so that with adequate help, these students can fully progress in both education and life.

3. Dyslexia in Foreign Language Learning

Dyslexia can greatly affect the educational success of students (Fišer, 2019). Considering the above-mentioned learning difficulties that learners with dyslexia can experience, it can be concluded that the most problems will occur with school subjects that include language acquisition. This refers to not only native (L1) but also foreign languages (L2). According to Nijakowska et. al. (2018):

[d]yslexic individuals experience problems with L1 processing which vary in scope and intensity depending on the transparency of the orthographic system of a language. Such problems are mainly identified at the phonological level and manifested by poor word-level decoding and spelling. These are often coupled with difficulties in L2 literacy development. (pp. 357-358)

Everatt and Elbeheri (2008) explained the levels of language transparency. Transparent languages are those in which the connection between phonemes and graphemes is very simple (pronunciation and writing mostly correspond), while in less transparent languages orthography is more complex, i.e., one letter can represent a few sounds, and one sound can be represented by different letters. Everett

and Elbeheri (2008) also state that the most fitting example of a less transparent language is the English language. English orthography is less transparent because the connection between sounds and letters is very complex and inconsistent. This is the reason why English language acquisition can be quite complicated for learners with dyslexia.

However, regardless of the transparency of the language, students with dyslexia can encounter difficulties with language acquisition in every language. Bošnjak-Terzić claims that this is because mastering any foreign language includes the acquisition of four skills - reading, listening, speaking, and writing. Learners with dyslexia lag behind in the progress of these abilities due to difficulties in phonological processing and therefore face greater problems in language learning (2015). Fišer lists additional difficulties that learners with dyslexia can come across while learning a foreign language such as “sequencing activities, optimal use of short-term and long-term memory, and phonological activities” (2019, p. 26). According to Bogdanowicz and Bogdanowicz (2016) the most common difficulties that appear in the field of phonology are the recognition and production of phonemes, while in morphology it is mostly about not understanding the meaning of morphemes or even the impossibility of producing new words. Apart from that, difficulties also occur in the field of syntax, where learners have problems understanding grammatical rules, and lexis, where memorizing vocabulary can be quite problematic (as cited in Bošnjak-Terzić, 2015).

As mentioned previously, students may have difficulties in acquiring L1 as well. Some authors have explained the connection between L1 and L2 acquisition in students with dyslexia. Sparks (1995) states that difficulties in acquiring one's mother tongue will probably manifest themselves in learning a foreign language. He also believes that students with dyslexia have an equal ability to acquire L1 and L2 (as cited in Bošnjak-Terzić, 2015). Nijakowska (2010) agrees and claims that the effectiveness of acquiring L1 affects foreign language achievements i.e., the better they are in their mother tongue, the better they are in non-native languages. Additionally, the skill of reading comprehension in L1 and in L2 are reciprocally initiated and developed (as cited in Bošnjak-Terzić, 2015).

4. Dyslexia in Foreign Language Teaching

Given that children are not being tested for learning difficulties when enrolling in primary schools, teachers should be the ones who, while teaching, are able to recognize the symptoms that indicate dyslexia. In addition to recognition, teachers should individualize their teaching methods according to dyslexic learners so that they can participate in classes with their full potential and that they can have better opportunity to make progress (Fišer, 2017). To be able to notice the signs and to adapt teaching methods and materials to dyslexic students, it is essential for teachers to have proper theoretical and practical training.

4.1. Teaching Approaches in Teaching Students with Dyslexia

Large number of researchers (Ganschow, Sparks & Javorsky, 1998; Schneider & Crombie, 2003) established that traditional FL teaching methods are not efficient for learners with dyslexia and that they learn most efficiently when the teaching process is based on a cumulative, explicit, and structured approach together with multisensory techniques and enhanced metalinguistic awareness (as cited in Kałdonek-Crnjaković & Fišer, 2017).

According to Ganschow and Sparks (1995) and Sadry et. al. (2022) the most effective method in teaching foreign languages to dyslexic students is the Multi-Sensory Learning Approach (MSL) (as cited in Sadry et. al., 2022), The MSL method is an inclusive approach characterized by the simultaneous use of several different senses (visual, auditory, tactile, and kinesthetic) (Kałdonek-Crnjaković, Fišer, 2017) and specialized instruction that enables the brain to develop more efficient pathways of learning.

Examples of the MSL approach include asking thought-provoking questions, using flashcards, colour-coded and puzzle cards for learning vocabulary, sentence structure or spelling, mnemonic devices, pre-task activities, shaping letters and words in the air or on the desk for learning specific spelling patterns, making a comparison between the student's native language (L1) and the target language, playing interactive games, and giving explicit feedback which provides the student with constructive advice and examples of how they can improve their work and make progress in learning (Butkiewicz & Bogdanowicz, 2006; Kałdonek-Crnjaković & Fišer, 2021;

Kormos & Smith, 2012; Nijakowska, 2010; Schneider & Crombie, 2003 as cited in Fišer & Každonek-Crnjaković, 2022).

Some other activities connected to MSL are color coding of vowels for better visual representation and recognition, breaking down the words into syllables, using vocabulary items in context, pantomiming the words or commonly used phrases, and listening to audio books (Sparks and Miller 2000, as cited in Sadry et. al., 2022).

The second approach to teaching students with dyslexia is structured teaching. As Každonek-Crnjaković and Fišer (2017) explain, during teaching, simpler contents should be covered first, and then the more complex ones can be added to the level of knowledge already achieved earlier. Miles (1993) supports their claims and confirms that the language teaching programs should be “structured, systematic, cumulative, and thorough” (as cited in Fišer, 2019, p. 40). Every language has a certain level of complexity. Numerous rules, exceptions to the rules and differences from the mother tongue which can be confusing. In order for students, especially students with dyslexia, to really understand and assimilate these contents, it is important to simplify them gradually and in an understandable way. What is more, by using a structured approach to teaching, the integration of language rules is enabled, while their accumulation is avoided. (Fišer, 2019).

Ganschow and Patton (2008) consider the explicit way of teaching foreign languages to students identified with dyslexia to be useful in teaching grammar, letter-sound relations, but also semantic and socio-pragmatic contexts (as cited in Každonek-Crnjaković, Fišer, 2017). Gombert (2003) also considers explicit teaching in teaching grapheme-phoneme relation to be effective because he believes that it encourages the automatization of reading, and he also claims that the same teaching method is helpful in teaching morphology because it helps learners with dyslexia to be able to decode words with irregular orthography and helps them develop their writing skills as well (as cited in Fišer, 2019). In addition to direct and structured explaining, teachers can additionally use comparisons with the L1, but also other methods to further simplify the content. For example, when teaching grammar, teachers can use a color-coding system or schemes. By using the same color-coding system, students learn what each color represents, making it easier for them to visualize complex grammatical structures. (Cimermanová, 2015).

4.2. Adjustments in Teaching Students with Dyslexia

In addition to different teaching approaches, there are also different teaching aids and suggestions on how to further adapt and improve foreign language teaching for learners with dyslexia.

Nowadays, computers and the usage of information and communication technology (ICT) are almost inevitable. The development and diverse possibilities of ICT have led to the very frequent use of ICT in the process of education. Fišer (2014) claims that the use of technology in teaching is also very helpful when it comes to students with specific learning disabilities. In his study, Dimitriadi (2000) points out several examples in which the usage of information and communication technology (ICT) has been proven beneficial for dyslexic students. These positive aspects of ICT usage include improved phonological decoding and reading comprehension abilities. ICT also positively affects auditory processing and sound discrimination, improves visual processing and discrimination abilities, provides opportunities to practice memory skills, helps to overcome difficulties with following instructions, but also stimulates better concentration and motor coordination (as cited in Fišer, 2019).

In addition, Vouglanis (2023) states that the use of ICT also increases the motivation and self-confidence of students with dyslexia. The same author explains that the use of ICT is also useful when it comes to the feeling of independence. Different learning materials, tools and the Internet give students an opportunity to gain control over their learning process and to reduce their dependence on teachers, which can significantly affect their feeling of independence (2023).

Dictionaries are inevitable when learning a foreign language. In her research Fišer (2019) explains that electronic dictionaries can be useful for dyslexic students, but she also points out that these dictionaries will only be helpful if learners do not rely entirely on them, i.e., learners should at least partially know the spelling of a word, otherwise they will not be able to recognize the correct one.

Fišer (2019) offers extensive list of other suggestions useful for teachers to adjust their classes for students with dyslexia:

- “slowing down the pace of lecturing
- additional time for solving tasks,

- texts should be printed in a font adjusted to students with dyslexia (e.g., Comic Sans MS)
- revealing a topic that will be covered in the next lesson in advance,
- predicting more time for the acquisition of lexical and grammatical concepts
- avoiding the student's reading aloud or writing on the board in front of the class (unless the student shows interest)
- using reworked, concise, simpler texts and reducing the number of terms that a student should learn,
- clearly marking important places in the textbook - sentences, rules, examples, pictures, procedures,
- assigning less tasks
- solving written tasks should not be limited by time and errors that are obviously caused by dyslexia should not be graded,
- spelling errors should not be corrected, but only indicated (underlining the word with the error) so that the student can identify and correct these mistakes by himself with the help of a textbook or a dictionary,
- instructing the student to learn with help of mind maps (which a student creates independently according to studied areas)
- together with the student and the parent, choose a notebook and a writing tool most suitable for that specific student,
- using puzzles, etc.” (p. 55).

Bošnjak-Terzić claims that students with dyslexia should be examined orally more often than in written form. Also, when they are exposed to written tests, the usage of correct semantically and syntactically complex sentences should not be a must (2015). According to the same author (2015) not only complex written texts should be used for oral examination, but other materials adjusted for students with dyslexia, such as pictures, videos or audio recordings are also preferable.

Clearly there are a lot of adjustments which can/should be applied when working with students with dyslexia. However, every individual is different, and this should also be taken into consideration in lesson planning. A job of a teacher includes not only recognizing the symptoms of learning difficulties, but also recognizing what the individual really needs, which methods or materials would

be the most appropriate, how to use the learner's strengths, and how to find a balance between adjusting the materials and the learning environment to learner's needs and still not making him/her feel isolated from the rest of the class. To be able to make appropriate adaptations, a teacher must be fully familiar with the language and with specific learning difficulties. However, EFL teachers often find it challenging to conform their teaching methods to the strengths which students with dyslexia have. Unfortunately, this is often so because the EFL teachers are deficient in essential knowledge and practical skills to modify their materials and approaches in the most useful way (Nijakowska et al, 2018).

5. An Overview of Previous Research

As already mentioned throughout the thesis, dyslexia has been a topic of numerous studies. Given that it is still under-examined and not fully clarified, it gives new authors the impetus for further research from different perspectives. As this thesis deals with dyslexia in EFL classroom, or more precisely with knowledge, attitudes, and competences of pre- and in-service EFL teachers towards dyslexia, some other research with similar topics conducted in Croatia but also in foreign countries will be mentioned and shortly presented.

5.1. Foreign Research About Dyslexia in EFL Classrooms

In 2014, Nijakowska conducted research about European pre- and in-service teachers' knowledge of dyslexia, self-confidence in teaching foreign languages to dyslexic students, experience, and their needs and preferences regarding professional training in this specific field. In total, answers of 292 participants (both in-service EFL teachers and students studying to become EFL teachers) were analyzed. This study has shown that most of the participants evaluated their self-confidence, knowledge, and experience in teaching, grading, and recognizing dyslexic students as quite low. Moreover, a considerable number of participants admitted that their professional training before and after getting a job was not efficient enough when it comes to topics such as nature of dyslexia,

difficulties in non-native language learning and appropriate teaching methods/approaches. Also, a majority of the participants revealed the need for and interest in additional education in teaching dyslexic students.

With their research in 2018 Nijakowska, Tsagari and Spanoudis questioned the preparedness of English as foreign language (EFL) teachers to include learners with dyslexia in mainstream schools in Greece, Cyprus, and Poland. They also examined the differences between these countries and the professional training needs when it comes to dyslexia. The questionnaires of 546 EFL pre- in-service teachers were analyzed. The analysis showed that the nature of experience of EFL teachers in teaching students with dyslexia appears to influence how teachers perceive their feeling of preparedness to work with dyslexic students in mainstream schools. According to the results, teachers who were personally involved in inclusive activities, who had experience in teaching students with dyslexia seemed to have more understanding, and self-esteem in applying inclusive teaching practices. When it comes to differences between countries, the results showed that Greek EFL teachers feel more prepared to include dyslexics than the teachers from Poland and Cyprus. Of course, in-service teachers felt more prepared than pre-service teachers. All in all, authors concluded that EFL teachers do not have enough opportunities to be professionally trained for teaching students with dyslexia. Also, a great majority of participants claimed that their knowledge in this area is still insufficient and that they are trying to enhance their skills and knowledge by themselves (through different methods and materials).

In 2019, Chung also published his study about pre-service teachers' knowledge, professional training, and attitudes towards teaching dyslexic students. The research focused only on Hong Kong pre-service teachers and included 92 participants in total. Results showed that pre-service teachers were still not educated enough when it comes to knowledge about dyslexia. However, they had positive attitudes towards the connotations of the word and dyslexia in general. Another less positive research result was that pre-service EFL teachers expressed less confidence and positiveness in working with students with dyslexia.

5.2. Similar Research Conducted in Croatia

In 2003, Kuvač and Vancaš conducted a research among the students studying at the Faculty of Education in Zagreb aiming to investigate their knowledge about language and speech difficulties. After analyzing the data collected through a questionnaire (which included nine questions answered by 57 graduate students), they realized that 41% of the third year and 37% of the fourth-year students did not show enough knowledge about dyslexia. Finally, the authors concluded that additional education of future teachers was necessary for them to provide better education to students with learning difficulties (as cited in Fišer, 2019).

In 2015, Fišer and Dumančić conducted research about the EFL teachers' competences and preferences when it comes to teaching students with dyslexia. The aim of their research was to examine foreign language teachers' beliefs about necessary adjustments in teaching and classroom management techniques while working with dyslexic learners. The participants were 108 foreign language (FL) teachers who were working in Croatian primary schools. The results indicated a moderate tendency towards using adjusted teaching methods, which demonstrates the need to enrich the study programs at the faculties where future EFL teachers are trained (Fišer & Dumančić, 2015).

Fišer conducted another research in 2019 where she also wanted to investigate the competences and attitudes of Croatian in- and pre-service English language teachers towards teaching students with dyslexia. This research included more participants than the previous one. The final number of participants was 206 (EFL primary school teachers and graduate students). According to the results of the research, it was established that the most teachers did not attend courses that could have taught them to work with students with dyslexia. The teachers' insufficient level of knowledge acquired to work with dyslexic students (during their education) was also supported with the fact that their knowledge of dyslexia was moderate and that they had moderately positive attitudes towards teaching adjustments. Surprisingly, the results have also shown that graduate students have better general knowledge about dyslexia as well as more positive attitudes towards teaching adjustments. During the analysis, it was also noticed that both teachers and graduate students had quite low self-esteem regarding their preparedness to work with students with dyslexia after finishing college. Finally, it can be stated that EFL pre- and in-service teachers in Croatia do not acquire adequate competences for teaching dyslexics during their faculty education nor during their professional training after employment.

Most recently, in 2022, two Croatian authors - Fišer and Každonek-Crnjaković – conducted a study on the same topic. They decided to explore whether Croatian EFL teachers’ teaching practice is inclusive and dyslexia friendly. It is a qualitative type of research, which included eight primary and eight secondary school teachers. The results of this research have shown that teaching practice of Croatian English teachers is indeed dyslexia friendly to some extent. According to the study, the participants have correctly defined dyslexia, and they are acquainted with how dyslexia can affect the development of EFL abilities. They also emphasized how they used different approaches and how they adjusted themselves and their classes to the needs of their students.

On the other hand, the analysis also shows that participants may feel unprepared or not competent enough to teach students with dyslexia. This was also supported by the fact that the participants expressed their willingness to expand their knowledge in this area. Since some participants expressed their doubts or insecurities while answering some questions and that there are some differences in knowledge and practice between different EFL teachers, the authors stated that further education and practice would be beneficial.

6. The Research Study

6.1. Aim and Research Questions

The aim of this thesis was to investigate the differences between graduate English language students at the Faculty of Humanities and Social Sciences in Osijek and primary teachers of English language in Croatia when it comes to their knowledge about dyslexia, attitudes towards students with dyslexia, different teaching approaches and adjustments. To achieve the aim of this paper, the following research questions were posed:

RQ1: Do pre- and in-service English teachers acquire relevant knowledge about dyslexia and the teaching techniques while working with students with dyslexia during their faculty education?

RQ2: Is there a difference between pre- and in-service teachers in attending workshops/seminars on the topic of dyslexia and are they willing to educate themselves further in this area?

RQ3: Is there a difference between graduate EFL students and in-service EFL teachers in their feeling of preparedness and acquired knowledge about dyslexia?

RQ4: Is there a difference between graduate EFL students and in-service EFL teachers in their attitudes towards dyslexia, teaching approaches and teaching adjustments?

6.2. Sample

The participants of this research were graduate students of English language and literature at the Faculty of Humanities and Social Sciences in Osijek and primary school English as foreign language teachers from Croatia. In total, 113 participants took part in the research, out of which 62 were graduate students and 51 English language teachers working in primary schools all over Croatia. There were 94 female and only 19 male participants.

Students were enrolled either in the first or in the second year of graduate study. Most of the students attended their final year (N = 40), while the rest of them (N = 22) attended the first year of graduate study. Due to the topic of this research, only graduate pre-service EFL students were surveyed. Considering the fact that English as a single study programme at the Faculty of Humanities and Social Sciences in Osijek is not a possibility, all the participants were double-major graduate EFL students. There were seven additional majors in total, and these were Croatian (N = 16), German (N = 13), Pedagogy (N = 12), Philosophy (N = 8), Hungarian (N = 5), Sociology (N = 4) and History (N = 4). With the minimum of 13 and maximum of 21, the average amount of years that the respondents (graduate students) have studied English is 17,02 years.

All pre-service teachers attended the same faculty, while the in-service teachers obtained their diplomas at different faculties. Most in-service teachers obtained their diplomas at the Faculty of Humanities and Social Sciences in Osijek (N=19), former Faculty of Pedagogy in Osijek (N=11), Faculty of Humanities and Social Sciences in Zagreb (N=8), Faculty of Humanities and Social Sciences in Rijeka (N=3), Faculty of Education in Osijek (N=2), University of Zadar (N=2), Faculty of Humanities and Social Science in Split (N=2), Faculty of Humanities and Social Sciences in Mostar (N=2), and Faculty of Education in Petrinja (N=2). With the minimum of 1 and maximum of 30, the average amount of years that in-service teachers have been teaching English as a foreign language is

13,81. Most of them have already had experience in teaching students with dyslexia (N =42). Only 9 of them have never been teaching English to dyslexic students.

6.3. Instrument

The instrument that was used for the research was a questionnaire consisting of four main parts (see Appendix). The last part (part D) was additionally divided into two smaller parts (D1 and D2). A major part of the questionnaire is based on a similar study conducted in Croatia by Fišer (2019). Other parts of the questionnaire were changed to adapt the questionnaire even more to the aim of this research and are also based on previously conducted research by Chung (2019) and Nijakowska et al., (2018).

The first, that is, part A of the questionnaire, consists of demographic questions about the respondents themselves. Two questions are the same for both students and teachers (gender and the university they attend/have attended). Furthermore, in this part, students should have answered questions about which course (in addition to English) and which semester they are enrolled in how long they have been learning English. When it comes to teachers, they should have answered the questions about how long they have been teaching English and whether they have been teaching English to students with dyslexia. There are no differences between questions for students and teachers when it comes to the other parts of the questionnaire (B, C, D1 and D2).

The following part of the questionnaire (that is part B) refers to data on education and professional training of both students and teachers. Multiple choice questions predominate in this part of the questionnaire. Multiple choice questions seek answers to questions such as how participants were introduced to dyslexia, what is the ideal way to teach students about dyslexia, what they personally find useful during education and what else they would like to learn when it comes to this topic. Moreover, in order to get a little insight into the situation at universities, the participants were asked questions such as whether they attended or are attending courses in which they are taught to work with students with dyslexia, how often they participated in seminars or workshops related to this topic,

but also whether they feel ready to teach students with dyslexia after receiving their diplomas, as well as whether they want to improve themselves further in this specific area.

Parts C, D1 and D2 of the questionnaire were to be filled out by the participants using a Likert scale ranked from 1 = I strongly disagree to 5 = I strongly agree. The penultimate part (part C) was about general knowledge of dyslexia, while the last part (part D) was about participants' attitudes towards dyslexia (D1) and different teaching approaches in working with students with dyslexia (D2). The total number of items in the entire questionnaire is 48. The questionnaire was administered in Croatian to avoid any potential misinterpretation.

6.4. Procedure

Before filling in the questionnaire, the respondents were informed about the purpose of the study and its content. The author also pointed out the fact that the questionnaire is completely anonymous. Students filled out the questionnaire at the faculty during their lectures and it was explained to them that participation was not mandatory. Teachers filled out the questionnaire at a time that suited them.

The participants were also instructed not to answer based on what they think is expected of them, but to be completely honest and not to overthink the items. Filling out the questionnaire required approximately ten to fifteen minutes of their time.

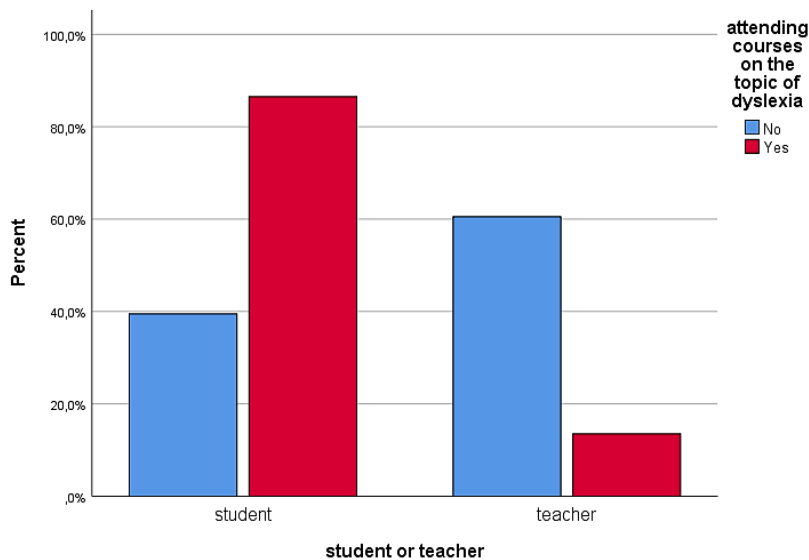
6.5. Results

In the present study, descriptive statistics were used to summarize the demographic variables of the sample and the distribution of different variables regarding dyslexia. Descriptive statistics included means, standard deviations, medians, minimum and maximum results. The Chi-square test was used to assess the associations between different categorical variables, such as respondents' proficiency level and other variables regarding dyslexia. All analyses were performed using Statistical Package for the Social Sciences (IBM SPSS, version 26).

6.5.1. Dyslexia During Education

Data analysis revealed that as many as 76 (67.3 %) out of 113 participants did not participate in faculty courses in which future teachers of English as a foreign language are educated to work with students with dyslexia. When it comes to proficiency groups, 30 out of 62 students (48.39 %), and 46 out of 51 teachers (90.2 %) have not attended courses about dyslexia.

Figure 1: Frequency of the training courses related to dyslexia attended by pre- and in-service teachers



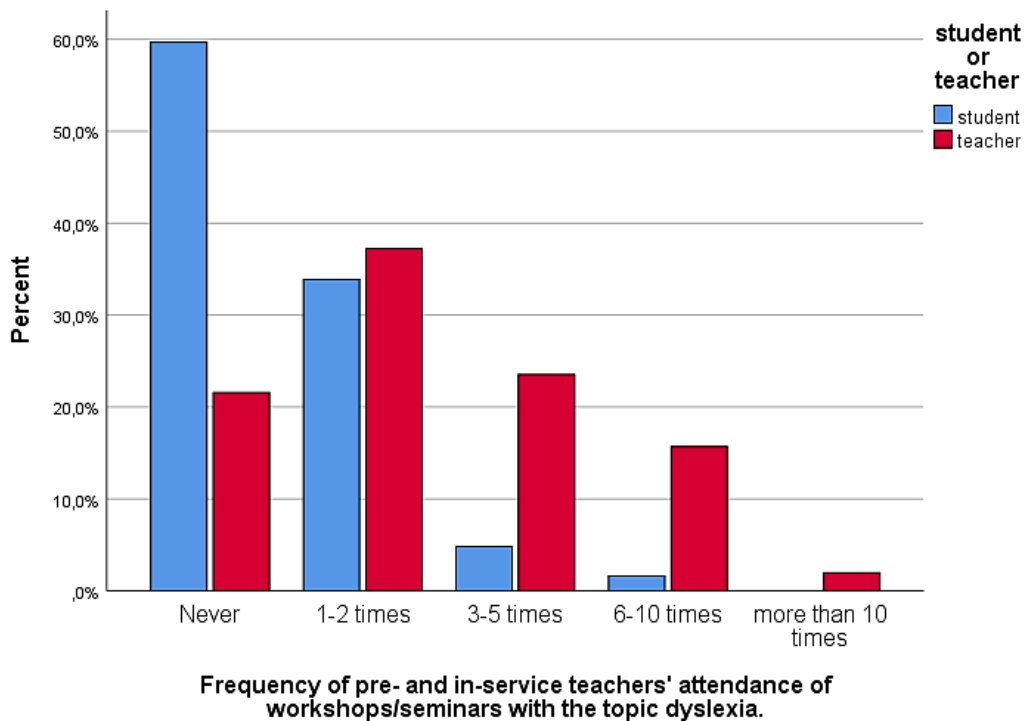
In order to provide an answer to the first research question, a Chi-Square Test of Independence was conducted. to assess the relationship between pre- and in- service teachers and whether they have attended courses connected with the topic of dyslexia. The results indicate that there is a significant relationship between the two mentioned variables, $\chi^2 (1, N=113) = 22.211, p = .000$.

Table 1: *Descriptive statistics for variables regarding attending courses about dyslexia according to proficiency level.*

Attending courses about dyslexia						
	Yes		No		χ^2	P
	N	%	N	%		
Student	32	51.61	30	48.39	22.211	.000
Teacher	5	9.80	46	90.19		

The second research question aimed to examine whether pre- and in-service teachers attend workshops/seminars related to the topic of dyslexia to acquire some additional knowledge, whether they are willing to educate themselves further in this area.

Figure 2: Frequency of pre- and in-service teachers' attendance of workshops/seminars with the topic dyslexia.



The analysis of this question established that out of a total of 62 pre-service teachers, 37 (59.68 %) of them never participated in a workshop/seminar on the topic of dyslexia, 21 (33.87%) of them participated 1-2 times, 3 (4.84%) of them participated 3-5 times, 1 (1.61%) pre-service teacher participated 6-10 times, and none participated more than 10 times.

Out of 51 in-service teachers, 11 of them (21.57%) never participated in a seminar/workshop about dyslexia, 19 of them (37.26%) participated 1-2 times, 12 of them (23.53%) 3-5 times, 8 of them (15.69%) 6-10 times and only one (1.96%) in-service teacher participated in these workshops/seminars more than 10 times.

As for the willingness to participate in additional training, participants had to answer with the help of a Likert scale (1- I strongly disagree to 5- I strongly agree). Two students strongly disagree with the statement that they want to improve themselves further in teaching students with dyslexia, 3 of them neither agree nor disagree, 20 of them agree and as many as 37 strongly agree.

None of the in-service teachers strongly disagree, 3 of them neither agree nor disagree, 18 agree and 30 strongly agree.

Table 2: *Descriptive statistics for variables regarding willingness to improve skills in teaching students with dyslexia according to participants' proficiency level*

		Student		Teacher		Total	
		N	%	N	%	N	%
I want to improve my skills in teaching students with dyslexia.	I strongly disagree	2	3.23	0	0	2	1.77
	I neither agree nor disagree	3	4.84	3	5.88	6	5.31
	I agree	20	32.26	18	35.29	38	33.63
	I strongly agree	37	59.68	30	58.82	67	59.29
Total		62	100	51	100	113	100

To answer the third research question, a Chi-Square test was conducted. This test was performed to check the relationship between pre- and in-service teachers and how often they attended different seminars/workshops where the topic was dyslexia. Significant relationship between the two variables was determined, $\chi^2(4, N=113) = 25.196, p < .001$.

Table 3: *Descriptive statistics for variables regarding attending seminars/workshops on the topic of dyslexia according to participants' proficiency level*

Attending seminars/workshops on the topic of dyslexia						
	Student		Teacher		χ^2	P
	N	%	N	%		
Never	37	59.68	11	21.57	25.196	.000
1-2 times	21	33.87	19	37.26		
3-5 times	3	4.84	12	23.53		
6-10 times	1	1.61	8	15.69		
More than 10 times	0	0.00	1	1.96		

In addition to attending courses, seminars and workshops, the participants were also questioned about other ways through which they acquired knowledge about dyslexia.

Table 4: *Descriptive statistics of other sources of knowledge about dyslexia*

	N	Minimum	Maximum	Mean	Std. Deviation
TV shows	113	0	1	.42	.497
Internet	113	0	1	.88	.320
Newspapers and magazines	113	0	1	.15	.359
Professional literature	113	0	1	.59	.493
Fiction	113	0	1	.08	.272
Personal experience	113	0	1	.36	.483

Table 4 presents the results of the questionnaire item where the respondents were asked if they had been acquainted with the term dyslexia through some other source. As the results in the table show, the respondents circled the Internet most often. The Internet was followed by professional literature,

TV shows and personal experience. Other sources, particularly newspapers/magazines as well as fiction were only rarely chosen.

Another Chi-Square test was performed to question the relationship between students and teachers and their feeling of preparedness to teach students with dyslexia. There was no significant relationship between these two variables, $\chi^2(3, N=113) = 6.690, p = .082$.

Table 5: *Descriptive statistics for variables regarding participants' preparedness to teach students with dyslexia according to their proficiency level*

I believe that after obtaining a diploma from the university I attend/attended, I am/was ready to teach students with dyslexia.	Student		Teacher		χ^2	P
	N	%	N	%		
I strongly disagree	17	27.42	25	49.02	6.690	.082
I disagree	26	41.94	15	29.41		
I neither agree nor disagree	10	16.13	8	15.69		
I agree	9	14.52	3	5.88		

In addition to the Chi-square test, the Pearson correlation coefficient was performed to evaluate the relationship between the number of attended courses which included the topic of dyslexia and their feeling of preparedness to teach students with dyslexia.

Table 6: *Pearson correlation between attending courses which deal with the topic dyslexia and participants' preparedness to teach students with dyslexia*

	Attending courses	Preparedness
Attending courses	1	.309**
Preparedness	.309**	1

p<.05*; p<.01**

The table 6 shows that there was a significant positive correlation between these two variables $r = .309$, $p < 0.01$. This indicates that the more courses dealing with dyslexia the participants attend, the more prepared they felt to teach the students with dyslexia.

6.5.2. Knowledge About Dyslexia

Table 7: *The difference in knowledge of dyslexia between pre- and in-service teachers of English as a foreign language*

Variable		Mean	Std. Deviation	t	df
knowledge about dyslexia	Student	3.64	.421	-4.82	110
	Teacher	3.68	.365		

p<.05*; p<.01**

Table 7 shows an independent-samples t-test which was conducted to compare general knowledge about dyslexia between students and teachers. The analysis of this test shows that there was no significant difference between pre-service (M = 3.64, SD = .421) and in-service teachers regarding knowledge (M = 3.68, SD = .365); $t(110) = -.482$ $p > 0.05$, two-tailed. Teachers showed slightly better knowledge of dyslexia than students.

6.5.3. Attitudes About Dyslexia

Table 8: *The difference in attitudes about dyslexia between pre- and in-service teachers*

Variable		Mean	Std. Deviation	t	df
attitudes about dyslexia	Student	1.74	.377	-.784	111
	Teacher	1.80	.422		

$p < .05^*$; $p < .01^{**}$

The independent t-test was also applied to compare pre- and in-service teachers' attitudes towards dyslexia. There was no significant difference between pre-service (M = 1.74, SD = .377) and in-service teachers (M = 1.80, SD = .422); $t(111) = -.784$ $p > 0.05$, two-tailed.

Since many items in this part of the questionnaire are asked in a negative way, lower numbers will mean more positive attitudes. This actually means that pre-service teachers expressed more positive attitudes than in-service teachers, yet it is hardly noteworthy.

Table 9: *The difference in attitudes towards teaching methods and adjustments when teaching students with dyslexia between pre-service and in-service teachers*

Variable		Mean	Std. Deviation	t	df
attitudes towards teaching approaches and adjustments	Student	3.97	.608	1.255	111
	Teacher	3.84	.460		

p<.05*; p<.01**

In order to prove whether there are differences between the two groups and their attitudes towards various teaching approaches and adjustments in teaching students with dyslexia, another independent-samples t-test was used. According to the results (Table 9) there was no significant difference between pre-service (M = 3.97, SD = .608) and in-service teachers and their attitudes towards teaching approaches and adjustments in teaching learners with dyslexia (M = 3.84, SD = .460); $t(111) = 1.255$, $p > 0.05$, two-tailed. However, it can be said that pre-service teachers expressed somewhat more positive attitudes.

6.5.4. Teacher Comments on the Research

Some of the in-service teachers, in addition to filling-in the questionnaire, left their comments/opinions connected to the topic of this research.

Teacher 1: „I just wanted to add, that there surely are students with dyslexia, but they are often not diagnosed. That is the reason why we often work with students for which we doubt that they have some specific difficulties in word processing, but we do not have a document which confirms it.”

Teacher 2: “Even though I have been teaching for many years now, dyslexia is still a big unknown to me. Participation in one of the lectures on dyslexia made helped me understand what dyslexia actually is and how dyslexic children perceive texts. Theoretical lectures and examples are of less help, mostly because each child encounters an individual set of difficulties, and thus requires different approach. We mostly use oral examination, enlarged and adapted fonts, and additional time. It would be

beneficial to include experts such as speech therapists in education to set an example on how to work with dyslexic children.”

Teacher 3: “I think that dyslexia is an important aspect in teaching, especially in language teaching, but that it is still insufficiently elaborated, especially in pre-service teachers’ training.”

Teacher 4: “The topic of this research is very up to date the results will be useful to those who teach students with dyslexia, and equally helpful in spreading awareness about the needs of students with dyslexia.”

Teacher 5: “The topic is very relevant and close to my heart because I currently teach 5 students who are diagnosed with dyslexia.”

6.6. Discussion

This study aimed to explore Croatian EFL pre- and in-service teachers’ competence and feeling of preparedness to teach students with dyslexia. The first research question in the present study aimed to determine the EFL pre- and in-service teachers’ opinion on the amount of knowledge about dyslexia gained during their faculty education. The part of the questionnaire based on the educational background data and personal opinion of the respondents provided the measurements. The findings indicate that most of the participants did not attend any courses related to dyslexia. However, there is a statistical significance between pre- and in-service teachers attending courses related to the topic of dyslexia. A significantly larger number of graduate students stated that they had participated in courses with the topic on dyslexia. These results could be assigned to a larger number of the current university courses dealing with dyslexia and increased awareness of the syllabus designers to integrate such a relevant topic into an integral part of the TEFL programme. However, numerous researchers have confirmed that dyslexia as a topic is still not sufficiently covered during education (Kuvač & Vancaš, 2003 as cited in Fišer, 2019; Fišer & Dumančić, 2015; Nijakowska et al, 2018; Chung, 2019;). An independent-samples t-test was conducted to compare general knowledge about dyslexia between pre- and in-service teachers in Croatia. Contrary to our initial hypothesis, the analysis of the test showed

that there was no significant difference between pre- and in-service teachers. It can be pointed out that in-service teachers showed slightly better knowledge of dyslexia than students, but the difference is hardly noticeable. However, in her research, Fišer (2019) came to the opposite conclusion, i.e. graduate students showed better knowledge of dyslexia than in-service EFL teachers. It evidently shows that previous experience in class does not positively correlate with teachers' perception of their knowledge level.

The second research question sought to find out whether and to what extent had participants attended seminars or workshops on the topic of dyslexia. As with the first research question, the chi square test was used to see whether there is a statistical significance between the variable student-teacher and attendance at seminars or workshops where participants were trained to work with dyslexic students. The results pointed out at a statistically significant difference between the groups confirming that teachers were the ones who participated in different workshops or seminars more often. This could be explained by the fact that novice students are limited in their choices of the mandatory and elective courses, while in-service teachers are obliged to attend such courses as the part of their life-long education and in line with their personal and professional interests. Moreover, insufficient knowledge of the pre-service teachers could be assigned to the rarity of holding such seminars/workshops at the university, but also to students' lack of awareness or interest in the subject matter.

Still, the results could not be interpreted as completely positive, because most of the teachers attended the seminars/workshops only 1-2 times (N=19) and eleven of them had not participated at all. These results are fully in line with the study done by Fišer (2019), where it was also proven that in most cases, in-service teachers either never participated in such seminars, or at most 1-2 times. Results suggest that if the students are to find themselves in a situation where they would have to teach English to students with dyslexia, they will have to reach out for help or simply be resourceful in selecting other teaching methods and materials.

When asked to rank the additional sources through which pre- and in-service teachers became familiar with the term dyslexia, the Internet and professional literature were the most frequent replies. Results support the hypothesis that the Internet is the media they mostly rely on and professional literature is scientifically reliable and relevant source of the subject matter written by field experts and distinguished scholars.

In the second part the participants were asked to express their willingness to be educated more about dyslexia. As many as 37 graduate students (out of 62) and 30 teachers (out of 51) completely agreed with this statement. Interestingly, more than 90% of respondents in both groups expressed their willingness to be more educated about the subject matter. Some other studies also came to conclusion that a great number of participants stated that their knowledge level is insufficient and that they are willing to learn more about dyslexia in the EFL classroom (Nijakowska et al, 2018; Nijakowska, 2014, Fišer and Kałdonek-Crnjaković, 2022).

The third research question aimed to determine whether there is the difference between pre- and in-service teachers and their feeling of preparedness to work with students with dyslexia right after obtaining their diploma. Received data confirm that both pre- and in-service teachers share the same doubts and require additional training and practice to feel or become fully competent. Namely, a vast majority of participants claimed not to feel prepared to teach students with dyslexia right after finishing studies, but showed a rather strong desire for additional training in the field. We may conclude that both groups of participants are fully aware of their self-perceived competences or the lack thereof. These results agree with those presented in the research conducted by Fišer (2019) and Fišer and Kałdonek-Crnjaković (2022). In her study, Fišer claimed that both pre- and in-service teachers had quite low self-esteem regarding their preparedness to teach dyslexic students (2019). Chung (2019) However, increased personal engagement and a proactive approach regarding raising awareness of the importance of dyslexia in the EFL classroom might contribute to better teacher competences. Regarding pre-service teacher attitudes towards dyslexia, Chung (2019) also confirmed the results of this present study. However, he also highlighted that the participants seemed to have less positive attitude when it comes to teaching students with dyslexia (2019).

The fourth and the last research question of this paper aimed to examine whether there were differences between pre- and in-service teachers regarding their attitudes towards dyslexia, teaching approaches and teaching adjustments. The independent samples t-test was applied to compare pre- and in-service teachers' attitudes towards students with dyslexia. There was no significant difference between these two variables. As expected, both groups of participants exhibit a positive attitude towards dyslexia. An almost imperceptible difference can be noticed and is in favor of the pre-service teachers.

The results also demonstrate that there was no significant difference between students and teachers and their attitudes towards different teaching approaches and adjustments. Once again, their attitudes were positive. This outcome is a bit different than that presented by Fišer (2019), where participants had only moderately positive attitudes towards using different teaching adjustments. Consistent with the previous analysis and with the research by Fišer (2019), pre-service teachers expressed slightly more positive attitudes towards applying different teaching approaches and methods in their classrooms.

The additional descriptive comments by in-service EFL teachers are in congruence with the result of the present study. Dyslexia is not uncommon, it is hardly identified, and teachers are mostly those who should recognize the signs and react. Teachers recognized the importance of the subject matter and strongly suggested its integration in the future university courses as well as the on-going professional development.

Consistent with previous topic-related research findings, the present study came to conclusion that pre- and in- service EFL teachers have rather low self-esteem when it comes to teaching students with dyslexia. However, it did not affect their positive attitudes towards teaching students with dyslexia, or their willingness and need for further education in the field.

7. Conclusion

This research was conducted in order to investigate EFL pre- and in-service teachers' competences and attitudes towards dyslexia in EFL classrooms.

Dyslexia is one of the most common learning disabilities that teachers will encounter while teaching. Considering that there are no universal tests that can be used to diagnose dyslexia and that it is often very difficult to detect, it is important that future teachers are well acquainted with the characteristics and early signs of dyslexia. In addition, future teachers should be ready to adapt to students with dyslexia both in terms of materials and teaching approaches.

Based on the results of the study conducted among graduate students of English language and literature who study at the Faculty of Humanities and Social Sciences in Osijek and among Croatian

in-service English language teachers, it was found that the participants are not completely familiarized with the term dyslexia. Both students and teachers do not feel sufficiently prepared to work with students with dyslexia after finishing their faculty education. Research analysis has also found that on the one hand, during their professional education students do not attend enough courses or workshops related to dyslexia, and that they do not feel sufficiently prepared to work with students with dyslexia. On the other hand, it is important to point out that the respondents expressed a desire for additional training.

Additionally, both graduate students and teachers have predominantly positive attitudes towards students with dyslexia and towards adjusting classes to adapt them to students who benefit greatly from an individualized approach.

More research is surely required to better understand pre- and in-service teachers' attitudes and competences towards teaching English as a foreign language to students with dyslexia. In order to gain more reliable results, it is recommended to replicate this study with a larger number of participants in both students' and teachers' sample groups. Equally advisable would be to include students from different universities, as well as teachers at different education levels (primary, secondary, etc.).

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Appendix

Appendix 1: Questionnaire for English language graduate students

Upitnik za absolvente

A) Opći podaci

(Molim, zaokružite jedan od ponuđenih odgovora ili odgovorite prema uputama.)

1. Spol M Ž
 2. Naziv visokog učilišta koje pohađate (molim, navedite puni naziv učilišta i mjesto studiranja):

 3. Upisani smjer na visokom učilištu koje pohađate:

 4. Semestar na koji ste trenutno upisani:

 5. Ukupan broj godina učenja engleskog jezika:
-

B) Podaci o obrazovanju i stručnom usavršavanju

(Molim, zaokružite jedan od ponuđenih odgovora ili postupite prema uputama.)

1. Jeste li tijekom studija pohađali ili pohađate kolegije u kojima se buduće učitelje i nastavnike stranoga jezika obučava za rad s učenicima s disleksijom?

DA NE

2. Ako da, molim napišite nazive tih kolegija i zaokružite jesu li obvezni ili izborni:

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

3. Koliko puta ste sudjelovali na seminarima i/ili radionicama na kojima je tema bila disleksija (simptomi i/ili prepoznavanje disleksije, teškoće s kojima se učenici s disleksijom susreću, poučavanje takvih učenika...)?

(Molim, zaokružite broj jednoga od ponuđenih odgovora)

Niti jednom	1
1-2 puta	2
3-5 puta	3
6-10 puta	4
Više od 10 puta	5

4. Jeste li se upoznali s pojmom disleksije na neki drugi način osim gore spomenutih

(Molim zaokružiti sve što se na Vas odnosi):

a) televizijske emisije

b) internet

c) novine i časopisi

d) stručna literatura (knjige, časopisi)

e) beletristika

f) osobno iskustvo (Vi imate disleksiju, imate slučaj/eve disleksije u obitelji, prijatelji,

na radnom mjestu...).

5. Idealan oblik nastave o disleksiji i metodama poučavanja stranih jezika za učenike s disleksijom je (moguće je zaokružiti više od jednog odgovora):

- a) tiskani materijali za samostalno učenje
- b) online nastava
- c) online izvori koje mogu koristiti za samostalno učenje
- d) radionica koja se održava uživo
- e) drugi poželjni oblici izobrazbe, navedite _____

U pitanjima 6 i 7 molim zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.

LEGENDA:

- 1.....u potpunosti se ne slažem
- 2.....djelomično se ne slažem
- 3.....niti se slažem niti se ne slažem
- 4.....djelomično se slažem
- 5.....u potpunosti se slažem

6. Smatram da ću nakon stečene diplome visokog učilišta koje sam pohađao/la biti spreman/spremna poučavati učenike s disleksijom.

1	2	3	4	5
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7. Želim se dodatno usavršavati za poučavanje učenika s disleksijom.

1	2	3	4	5
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8. Tijekom obrazovanja želio bih učiti sljedeće

(Molim označite teme koje smatrate relevantnima; moguće je više od jednog odgovora)

- a) priroda disleksije
- b) poteškoće u učenju povezane s disleksijom
- c) problemi koje disleksija uzrokuje u učenju jezika

- d) ocjenjivanje učenika s disleksijom u nastavi jezika
- e) kako se dijagnosticira disleksija
- f) prilagodbe na koje učenici s disleksijom imaju pravo na važnim ispitima
- g) tehnike podučavanja jezika koje pomažu učenicima s disleksijom
- h) opći savjeti za podučavanje i upravljanje razredom za podučavanje učenika s disleksijom
- i) druga tema, navedite _____

9. Tijekom obrazovanja smatrao bih sljedeće korisnim

(Molim označite zadatke i aktivnosti koje smatrate relevantnima; moguće je više od jednog odgovora)

- a) kratka predavanja
- b) čitanje članaka
- c) čitanje poglavlja knjiga
- d) čitanje online materijala
- e) gledanje videa učionica
- f) slušanje/čitanje intervjua s učenicima s disleksijom
- g) slušanje/čitanje intervjua s učiteljima koji rade s učenicima s disleksijom
- h) kako dizajnirati materijale za podučavanje jezika za učenike s disleksijom
- i) vrednovanje materijala za podučavanje jezika osmišljenih za učenike s disleksijom
- j) izrada nastavnih priprema kako bi se zadovoljile potrebe učenika s disleksijom
- k) vrednovanje nastavnih planova/priprema
- l) ostali zadaci i aktivnosti, navedite _____

C) Opće poznavanje disleksije

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
- 2.....djelomično se ne slažem
- 3.....niti se slažem niti se ne slažem
- 4.....djelomično se slažem
- 5.....u potpunosti se slažem

1.	Ne postoji statistički značajna razlika u postotku dječaka i djevojčica koji imaju disleksiju.	1	2	3	4	5
----	--	---	---	---	---	---

2.	Disleksiju je moguće izliječiti lijekovima.	1	2	3	4	5
3.	Disleksija podrazumijeva teškoće u obradi pisanoga teksta.	1	2	3	4	5
4.	Disleksija može utjecati na motoriku i koordinaciju djeteta.	1	2	3	4	5
5.	Učenici s disleksijom postižu loš obrazovni uspjeh u svim nastavnim predmetima.	1	2	3	4	5
6.	Disleksija se u hrvatskom jeziku očituje isključivo kao teškoća u pisanju.	1	2	3	4	5
7.	IQ testovi su osnovna mjera procjene i prepoznavanja disleksije	1	2	3	4	5
8.	Disleksiju nije moguće prepoznati prije završetka prvoga razreda osnovne škole.	1	2	3	4	5
9.	Disleksiju se ne može naslijediti.	1	2	3	4	5
10.	Disleksiju uzrokuju razlike u funkcioniranju mozga.	1	2	3	4	5
11.	Osoba koja je disleksična ima veću vjerojatnost da će također imati ADHD, dispraksiju i/ili specifično jezično oštećenje od osobe koja nema disleksiju.	1	2	3	4	5
12.	Osoba s disleksijom vjerojatno ima izvrsno slušno radno pamćenje.	1	2	3	4	5

D)

D1) Stavovi o disleksiji

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
2.....djelomično se ne slažem
3.....niti se slažem niti se ne slažem
4.....djelomično se slažem
5.....u potpunosti se slažem

1.	Mislim da je disleksija mit.	1	2	3	4	5
2.	Riječ 'disleksija' zapravo je samo izgovor za lijenost.	1	2	3	4	5
3.	Učenici s disleksijom često ne uspiju kao odrasli ljudi.	1	2	3	4	5
4.	Obično učenici s disleksijom imaju niske sposobnosti.	1	2	3	4	5

5.	Nazivanje učenika 'disleksičarom' zvuči kao da on/ona ima problem koji se ne može izliječiti.	1	2	3	4	5
6.	Oznaka 'disleksija' može pomoći učeniku da zna da nije lijen ili glup.	1	2	3	4	5
7.	Oznaka 'disleksija' može pomoći učitelju da razumije kako podržati učenika.	1	2	3	4	5
8.	'Disleksija' može biti isprika za učenika da se prestane truditi.	1	2	3	4	5
9.	Roditelji često žele nazvati dijete „disleksičnim“ kada je ono zapravo nezrelo.	1	2	3	4	5
10.	Roditelji žele svoje dijete nazvati 'disleksičnim' kada ono zapravo ima niske sposobnosti.	1	2	3	4	5

<

D2) Stavovi o pristupu poučavanja učenika s disleksijom

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
- 2.....djelomično se ne slažem
- 3.....niti se slažem niti se ne slažem
- 4.....djelomično se slažem
- 5.....u potpunosti se slažem

1.	Učenici s disleksijom trebaju individualizirani pristup poučavanju stranoga jezika.	1	2	3	4	5
2.	Učenike s disleksijom treba poučavati strani jezik višeosjetilnim pristupom	1	2	3	4	5
3.	Učenike s disleksijom treba poučavati stranom jeziku strukturiranim pristupom (novo gradivo predstavljati u manjim cjelinama povezujući ga s već usvojenim).	1	2	3	4	5
4.	Učenici s disleksijom mogu koristiti rječnike tijekom nastave.	1	2	3	4	5
5.	Gluma je prikladna nastavna metoda u poučavanju učenika s disleksijom.	1	2	3	4	5
6.	Učenicima s disleksijom treba dopustiti strojno potpomognuto prevođenje teksta tijekom i izvan nastave.	1	2	3	4	5

7.	Računalne igrice su prikladna nastavna metoda u poučavanju učenika s disleksijom.	1	2	3	4	5
8.	Učenike s disleksijom treba izravnim/eksplicitnim putem poučavati sintaksi jezika.	1	2	3	4	5
9.	Učenicima s disleksijom treba dopustiti dodatno vrijeme za rješavanje pisanih zadataka.	1	2	3	4	5
10.	Učenicima s disleksijom treba izbjegavati davanje zadataka s prepisivanjem.	1	2	3	4	5
11.	Nastavne listiće namijenjene učenicima s disleksijom treba pisati/tiskati u obliku natuknica.	1	2	3	4	5
12.	U tiskanim materijalima namjenjenima učenicima s disleksijom treba izbjegavati neobične oblike slova.	1	2	3	4	5

Appendix 2: Questionnaire for EFL teachers

Upitnik za nastavnike

A) Opći podaci

(molim zaokružiti jedan od ponuđenih odgovora ili odgovoriti prema uputama)

1. Spol

M **Ž**

2. Koliko dugo predajete engleski kao strani jezik? _____ godina

3. Vrsta visokog učilišta koje ste pohađali? (Molim, napišite puni naziv učilišta i mjesto studiranja)

4. Jeste li predavali ili predajete strani jezik učenicima s disleksijom? **DA** **NE**

B) Podaci o obrazovanju i stručnom usavršavanju

(Molim, zaokružite jedan od ponuđenih odgovora ili postupite prema uputama.)

1. Jeste li tijekom studija pohađali kolegije u kojima ste se obučavali za rad s učenicima s disleksijom?

DA NE

2. Ako da, molim napišite nazive tih kolegija i zaokružite jesu li bili obvezni ili izborni:

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

_____ obvezni / izborni

3. Koliko puta ste sudjelovali na seminarima i/ili radionicama na kojima je tema bila disleksija (simptomi i/ili prepoznavanje disleksije, teškoće s kojima se učenici s disleksijom susreću, poučavanje takvih učenika...)?

(Molim, zaokružite broj jednoga od ponuđenih odgovora)

Niti jednom	1
1-2 puta	2
3-5 puta	3
6-10 puta	4
Više od 10 puta	5

4. Jeste li se upoznali s pojmom disleksije na neki drugi način osim gore spomenutih

(Molim zaokružiti sve što se na Vas odnosi):

a) televizijske emisije

b) internet

c) novine i časopisi

d) stručna literatura (knjige, časopisi)

e) beletristika

f) osobno iskustvo (Vi imate disleksiju, imate slučaj/eve disleksije u obitelji, prijatelji, na radnom mjestu...).

5. Idealan oblik nastave o disleksiji i metodama poučavanja stranih jezika za učenike s disleksijom je

(moguće je zaokružiti više od jednog odgovora)

- a) tiskani materijali za samostalno učenje
- b) online nastava
- c) online izvori koje mogu koristiti za samostalno učenje
- d) radionica koja se održava uživo
- e) drugi poželjni oblici izobrazbe, navedite _____

U pitanjima 6 i 7 molim zaokružiti broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.

LEGENDA:

- 1.....u potpunosti se ne slažem
- 2.....djelomično se ne slažem
- 3.....niti se slažem niti se ne slažem
- 4.....djelomično se slažem
- 5.....u potpunosti se slažem

6. Smatram da sam nakon stečene diplome visokog učilišta koje sam pohađao/la bio/bila spreman/spremna poučavati učenike s disleksijom.

1	2	3	4	5
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7. Želim se dodatno usavršavati za poučavanje učenika s disleksijom.

1	2	3	4	5
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8. Tijekom obrazovanja želio bih učiti sljedeće

(Molim označite teme koje smatrate relevantnima; moguće je više od jednog odgovora)

- j) priroda disleksije
- k) poteškoće u učenju povezane s disleksijom

- l) problemi koje disleksija uzrokuje u učenju jezika
- m) ocjenjivanje učenika s disleksijom u nastavi jezika
- n) kako se dijagnosticira disleksija
- o) prilagodbe na koje učenici s disleksijom imaju pravo na važnim ispitima
- p) tehnike podučavanja jezika koje pomažu učenicima s disleksijom
- q) opći savjeti za podučavanje i upravljanje razredom za podučavanje učenika s disleksijom
- r) druga tema, navedite _____

9. Tijekom obrazovanja smatrao bih sljedeće korisnim

(Molim označite zadatke i aktivnosti koje smatrate relevantnima; moguće je više od jednog odgovora)

- a) kratka predavanja
- b) čitanje članaka
- c) čitanje poglavlja knjiga
- d) čitanje online materijala
- e) gledanje videa učionica
- f) slušanje/čitanje intervju s učenicima s disleksijom
- g) slušanje/čitanje intervju s učiteljima koji rade s učenicima s disleksijom
- h) kako dizajnirati materijale za podučavanje jezika za učenike s disleksijom
- i) vrednovanje materijala za podučavanje jezika osmišljenih za učenike s disleksijom
- j) izrada nastavnih priprema kako bi se zadovoljile potrebe učenika s disleksijom
- k) vrednovanje nastavnih planova/priprema
- l) ostali zadaci i aktivnosti, navedite _____

C) Opće poznavanje disleksije

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
- 2.....djelomično se ne slažem
- 3.....niti se slažem niti se ne slažem
- 4.....djelomično se slažem
- 5.....u potpunosti se slažem

1.	Ne postoji statistički značajna razlika u postotku dječaka i djevojčica koji imaju disleksiju.	1	2	3	4	5
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2.	Disleksiju je moguće izliječiti lijekovima.	1	2	3	4	5
3.	Disleksija podrazumijeva teškoće u obradi pisanoga teksta.	1	2	3	4	5
4.	Disleksija može utjecati na motoriku i koordinaciju djeteta.	1	2	3	4	5
5.	Učenici s disleksijom postižu loš obrazovni uspjeh u svim nastavnim predmetima.	1	2	3	4	5
6.	Disleksija se u hrvatskom jeziku očituje isključivo kao teškoća u pisanju.	1	2	3	4	5
7.	IQ testovi su osnovna mjera procjene i prepoznavanja disleksije	1	2	3	4	5
8.	Disleksiju nije moguće prepoznati prije završetka prvoga razreda osnovne škole.	1	2	3	4	5
9.	Disleksiju se ne može naslijediti.	1	2	3	4	5
10.	Disleksiju uzrokuju razlike u funkcioniranju mozga.	1	2	3	4	5
11.	Osoba koja je disleksična ima veću vjerojatnost da će također imati ADHD, dispraksiju i/ili specifično jezično oštećenje od osobe koja nema disleksiju.	1	2	3	4	5
12.	Osoba s disleksijom vjerojatno ima izvrsno slušno radno pamćenje.	1	2	3	4	5

D)

D1) Stavovi o disleksiji

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
2.....djelomično se ne slažem
3.....niti se slažem niti se ne slažem
4.....djelomično se slažem
5.....u potpunosti se slažem

1.	Mislim da je disleksija mit.	1	2	3	4	5
2.	Riječ 'disleksija' zapravo je samo izgovor za lijenost.	1	2	3	4	5
3.	Učenici s disleksijom često ne uspiju kao odrasli ljudi.	1	2	3	4	5
4.	Obično učenici s disleksijom imaju niske sposobnosti.	1	2	3	4	5

5.	Nazivanje učenika 'disleksičarom' zvuči kao da on/ona ima problem koji se ne može izliječiti.	1	2	3	4	5
6.	Oznaka 'disleksija' može pomoći učeniku da zna da nije lijen ili glup.	1	2	3	4	5
7.	Oznaka 'disleksija' može pomoći učitelju da razumije kako podržati učenika.	1	2	3	4	5
8.	'Disleksija' može biti isprika za učenika da se prestane truditi.	1	2	3	4	5
9.	Roditelji često žele nazvati dijete „disleksičnim“ kada je ono zapravo nezrelo.	1	2	3	4	5
10.	Roditelji žele svoje dijete nazvati 'disleksičnim' kada ono zapravo ima niske sposobnosti.	1	2	3	4	5

D2) Stavovi o pristupu poučavanja učenika s disleksijom

(Molim, zaokružite broj na skali 1-5 ovisno o stupnju do kojega se slažete s tvrdnjom.)

- 1.....u potpunosti se ne slažem
2.....djelomično se ne slažem
3.....niti se slažem niti se ne slažem
4.....djelomično se slažem
5.....u potpunosti se slažem

1.	Učenici s disleksijom trebaju individualizirani pristup poučavanju stranoga jezika.	1	2	3	4	5
2.	Učenike s disleksijom treba poučavati strani jezik višeosjetilnim pristupom	1	2	3	4	5
3.	Učenike s disleksijom treba poučavati stranom jeziku strukturiranim pristupom (novo gradivo predstavljati u manjim cjelinama povezujući ga s već usvojenim).	1	2	3	4	5
4.	Učenici s disleksijom mogu koristiti rječnike tijekom nastave.	1	2	3	4	5
5.	Gluma je prikladna nastavna metoda u poučavanju učenika s disleksijom.	1	2	3	4	5
6.	Učenicima s disleksijom treba dopustiti strojno potpomognuto prevođenje teksta tijekom i izvan nastave.	1	2	3	4	5

7.	Računalne igrice su prikladna nastavna metoda u poučavanju učenika s disleksijom.	1	2	3	4	5
8.	Učenike s disleksijom treba izravnim/eksplicitnim putem poučavati sintaksi jezika.	1	2	3	4	5
9.	Učenicima s disleksijom treba dopustiti dodatno vrijeme za rješavanje pisanih zadataka.	1	2	3	4	5
10.	Učenicima s disleksijom treba izbjegavati davanje zadataka s prepisivanjem.	1	2	3	4	5
11.	Nastavne listiće namijenjene učenicima s disleksijom treba pisati/tiskati u obliku natuknica.	1	2	3	4	5
12.	U tiskanim materijalima namjenjenima učenicima s disleksijom treba izbjegavati neobične oblike slova.	1	2	3	4	5