

**TO LEARN OR NOT TO LEARN: IMPACTS OF DYSLEXIA  
AND AUTISM FOR LEARNING AND STUDYING ENG-  
LISH AS A FOREIGN LANGUAGE**

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<b>Tiivistelmä/Abstract -</b> <p>Tutkielman tarkoituksena oli tutkia, että minkälaisia vaikutuksia lukihäiriöllä ja/tai autismilla on englannin kielen opiskelulle ja oppimiselle vieraana kielenä. Lisäksi tutkielma pyrkii vastaamaan siihen, kuinka mahdollisia vaikeuksia voitaisiin helpottaa. Oppimisvaikeudet tulevat vuosi vuodelta tutummiksi oppilaitoksissa ja niihin päästään pureutumaan nykyiseltään paremmin. Kuitenkin oppimisvaikeuksien ymmärrys on vielä vaiheessa ja tutkimusta tarvitaan enemmän, jotta luokkahuoneessa voitaisiin ottaa huomioon kaikenlaiset oppijat. Lisäksi viime vuosina erityistä tukea tarvitsevat ovat sijoitettu luokkahuoneeseen muiden oppijoiden joukkoon, joten on erityisen tärkeää löytää keinoja, joita opettajat voisivat käyttää tukeakseen oppimisvaikeuksen omaavia opiskelijoita.</p> <p>Tutkielman tutkimusvaihe on suoritettu verkkokyselylomakkeena ja kyselyyn vastasi kaiken kaikkiaan 68 osallistujaa. Kyselylomake sisälsi kuusi kysymystä, jotka pyrkivät löytämään vastauksia tutkimuskysymyksiin ja näin ollen antamaan ratkaisuja englannin kielen opiskeluun vieraana kielenä. Verkkokysely on suoritettu Facebook-sovelluksen ryhmissä, jotka ovat tarkoitettu lukihäiriötä tai autismia poteville. Kyselyn kielenä toimii suomi ja vastaajien äidinkieli on suomi. Kyselylomake sisälsi kysymyksiä, jotka antoivat prosentuaalisia ja lauseellisia vastauksia. Vastausten perusteella voidaan todeta, että erityisesti lukihäiriöiset tunsivat englannin kielen opiskelemisen haasteelliseksi ja autismi yhdistettynä lukihäiriöön teki englannin kielen opiskelusta vielä haasteellisempää.</p> <p>Vastaajien vastausten perusteella voidaan poimia seikkoja, jotka helpottavat autististen ja lukihäiriöisten englannin kielen opiskelua. Erityisesti visuaalinen tuki, englanninkielisten elokuvien ja sarjojen katselu sekä muistisäännöt nähtiin englannin kielen opiskelua helpottavina seikkoina. Näiden vastausten avulla muun muassa opettajien on helpompi suunnitella opetusta niin, että myös oppimisvaikeuksia omaavat oppilaat saavat opetuksesta parhaimman mahdollisen hyödyn.</p>	
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# 1 INTRODUCTION

The impacts of different types of disorders on studying languages have been studied awhile. It is inevitable that some disorders influence learning at some extent. Since we live in a developing world, it is important to acknowledge that every student hardly have equal opportunities to learn. Therefore, there is a need for further research to offer solutions and aids for promoting language learning. The beneficial aids are important for the learners but also for the teachers. This present study has been done in the point of view of a future teacher, who wants to know more about learning difficulties to meet students' needs.

In the present study, effects of dyslexia and autism into studying and learning English as a foreign language were studied. It has been earlier revealed that dyslexic learners have problems with reading overall, and it might hinder foreign language learning (Nijakowska 2010: 67). Similarly, autistic learners have been proved to have linguistic problems (Ikonen 1999, Siikanen 1996), and it leads to that they learn differently, for instance, verbs, and they may have a vocabulary which includes mostly nouns (Siikanen 1996). In contrast, how their learning could be facilitated is more rarely researched. That created a need for further investigation.

The present study aimed to explore what kind of difficulties dyslexic and autistic learners encounter in studying English as a foreign language (EFL), why they have difficulties in learning EFL, and how their EFL learning could be facilitated. The study was conducted as an internet survey, and it attracted 68 participants. The survey included six questions which gathered information about the issues that were researched. The results were analyzed, and they offer some perspectives, e.g., for teachers. Additionally, the results reveal what kinds of difficulties dyslexic and autistic learners confront in a classroom.

## 2 DYSLEXIA

In this section, dyslexia is defined, and some causes behind dyslexia are presented. Additionally, it is discussed how they manifest, and what issues they bring to language learning. Lastly, some aids that have been found to be useful in previous studies for alleviating language learning, are presented.

### 2.1 Dyslexia and its effects on language learning

Dyslexia is a developmental cognitive disorder that hinders, for example, reading and spelling (Nijakowska 2010), and what is typical for dyslexia overall is that there is commonly an impairment in phonological processing (Nijakowska 2010: 4, Kormos and Smith 2012: 34). There are two types of dyslexia, P-type and L-type, and they differ from each other by how the dominance is changing between the right and the left hemisphere (Nijakowska 2010: 20). The left hemisphere is responsible of, e.g., a reading accuracy, whereas the right hemisphere ensures a good comprehension (Reid 2007: 8). Nevertheless, approximately 35-40% of dyslexic children are left out of this classification (Nijakowska 2010: 21). With regard to symptoms that can be seen in a dyslexic learner (DL), children with dyslexia find it difficult to read correctly or to learn how to read at all, and the process is usually slower than non-DLs' process (Nijakowska 2010). It is alleged that this aspect is the most characteristic feature in dyslexia (ibid.). However, even though dyslexic people have difficulties with reading, their ability to assimilate things is normal with the exception that acknowledgement of a printed text is worse than non-dyslexic people at similar age (Nijakowska 2010: 4). This problem causes constant issues in gaining knowledge by reading (ibid.), but dyslexic children's listening comprehension skills can be proper (Reid 2007: 6). After all, dyslexia is a permanent condition, even though features are changing when an individual is developing (Nijakowska 2010: 5), and symptoms may vary between two individuals (Reid 2007:

17). In other words, another student may struggle with understanding what has been read, and other might hardly keep their eyes in a correct line.

There are some aspects that affect negatively to foreign language (FL) learning if a FL learner has a specific learning difficulty (Nijakowska 2010: 67). As mentioned earlier, dyslexic people have difficulties with reading overall. According to Nijakowska (2010: 67), if individuals are struggling already with their own native language, they are susceptible to misfire in attempts to achieve fluent skills in a FL. The researcher adds that it is insufficient if a FL learner can only translate words from texts since she needs to be able to read thoroughly for understanding the meaning behind sentences. Those who have problems with a FL learning usually have linguistic deficiencies in different areas, for instance, in phonological (understanding and connecting sounds), syntactic (grammatical understanding), and semantic (conveying the meanings) areas (Nijakowska 2010: 68), and those areas are essential for understanding words (Kormos and Smith 2012: 28). These previously mentioned aspects, e.g., can inevitably influence in unfavourable manner their FL learning (Nijakowska 2010: 67). In addition, dyslexic people may have an atrocious attitude, and they might feel unmotivated to learn. However, this issue has been revealed to be more the result of complicated learning than its cause (Nijakowska 2010: 75).

It is evident that DLs have issues with, for example, learning second language (L2) vocabulary, and that may reduce their willingness to study L2 words (Kormos and Smith 2012: 64, 69). Additionally, it might be difficult for learners with a LD to bear in mind different words (Kormos and Smith 2012: 80). The problems might also occur as having trouble to convert letters to match with their phonological forms or segregating sounds (Nijakowska 2010: 20, 66), and, e.g., 'th' and 'ph' are letter combinations that might be problematic to pronounce (Reid 2007: 11). Similarly, words that sound similar might be disconcerting such as 'their' and 'there' or 'weather' and 'whether' (Reid 2007: 14, Rello and Baeza-Yates 2017). It needs to be noticed as well that DLs might leave out or add some words when writing (Reid 2007: 12, Rello and Baeza-Yates 2017).

Moreover, spelling is creating problems for DLs (Reid 2007: 10, Turner and Pughe 2005: 24, Rello and Baeza-Yates 2017). Dyslexic people might have, for instance, these problems with their first language (L1), and thus, the teachers are incapable to assume that DLs would be able to adapt L1 rules to L2 language rules (Kormos and Smith 2012: 71).

## **2.2 The frame means for facilitating language learning for people with dyslexia**

It is impossible to completely heal dyslexia since it can hardly be seen as a disease, but there are some aspects which might help DLs when they are studying (Nijakowska 2010: 121). There are two learning strategies which can help with understanding the actual meaning; a visual direct and a phonological indirect (Nijakowska 2010: 15). With these strategies, DLs could, for instance, consider if it is easier for them to understand the meaning of the words by seeing it visually or by hearing it. Nijakowska (2010: 115) reports that despite the chosen method, there is a need for phonological training. Bogdanowicz (1999), Horgan (1997), Merzenich et al. (1996) and Stein (2001, cited in Nijakowska 2010: 120) report that a computer program, which enabled changing sound aspects into a stretched speech, helped DLs. Furthermore, DLs need to be aware that since FL aspects might be difficult to remember, they need to reiterate things that they are learning (Nijakowska 2010, Reid 2007: 41). Lastly, it is important that DLs have a great amount of energy to learn a FL, and that they are committed to learning a FL (Kormos and Smith 2012: 79). The learners could create some mnemonics for themselves, which can help them to remember words, e.g., “I to the end will be your friend” and “O U lucky duck (could, would, should)” (Kormos and Smith 2012: 131, Turner and Pughe 2005: 26).

There are some aspects and aids that teachers should notice when teaching DLs. Though according to White et al. (2006, cited in Nijakowska 2010:117), it should primarily be noted that DLs are individuals, and these aids offer ways to alleviate dyslexic

problems instead of solving them. Firstly, teachers should be able to offer some advice for learning strategies, for example, how to read instructions (Nijakowska 2010: 116), and it is even more useful if these learning strategies can be taught in specific context (Kormos and Smith 2012: 119). Moreover, there are helping aspects which teachers can tell for the learners, for instance, creating mindmaps and spidergrams might be helpful (Nijakowska 2010: 149). Additionally, when teachers are planning lessons, they should be aware of helping aspects in their teaching. The multisensory learning has been noticed to be beneficial. It means that learners can use miscellaneous senses since the learning is offered in multiple ways, for instance, by tactile, auditory, and visual ways (Nijakowska 2010: 126, Kormos and Smith 2012: 126, Reid 2007: 41). In addition, handouts are useful, and they help learners (Nijakowska 2010: 149, Turner and Pughe 2005: 59). Offering these handouts in a pastel-coloured paper might help even more, and the usage of colours can overall be beneficial (Kormos and Smith 2012: 110, 120). Nevertheless, the handouts should be clear, and it should be avoided to making them complicated in order them to be beneficial (Nijakowska 2010: 149).

Even more aspects can be taken into consideration when designing a lesson. Different fonts should be paid attention to, and most people find, for example, 'Arial' more easily readable than 'Times New Roman' since 'Times New Roman' includes serifs, which are curves in letters (Kormos and Smith 2012: 110). Even a font size effects readability, and many DLs benefit from a bigger font size (Kormos and Smith 2012: 109, Rello and Baeza-Yates 2017) with addition that a text should be widely spaced (Nijakowska 2010: 121). In addition to text aspects, teachers should offer DLs more time, for instance, to do exams (Nijakowska 2010: 147). With extra time, it is possible to achieve better outcomes since it takes more time to read for people with dyslexia than for others as mentioned earlier. It is important to remember that a teacher can achieve an effective differentiation when the teacher carefully considers tasks, expectations, support and provided materials (Kormos and Smith 2012: 113). Furthermore, the command of a learner is good to notice. For example, if a learner is reluctant to read in such manner that the classmates hear, they should be allowed to read silently (Nijakowska 2010: 147, Turner



and Pughe 2005: 60). It would be important that the classroom would have a supportive atmosphere (Kormos and Smith 2012: 79). It can be achieved with taking different aspects into consideration when teaching. Overall, it would be important to bear in mind that despite these problems, DLs can have good English skills (Turner and Pughe 2005: 91).

### **3 AUTISM**

In this section, autism is defined. Symptoms of autism and their manifestation are also discussed. Additionally, its injurious effects on language learning and some means that have been found useful for alleviating language learning are presented.

#### **3.1 Autism and its effects on language learning**

Autism is a neurobiological developmental disorder in the central nervous system which is more common in males than in females (Ikonen 1999: 56, Williams 2010: 130, Aarons and Gittens 1999: 17), and it has multiple different types of symptoms (Ikonen 1999, Krappe 1996, Williams 2010: 127). The symptoms can be, for instance, a missing or deviant social communication, a missing or deviant linguistic or non-linguistic communication, a restricted or repetitive behaviour or atypical reactions to sense impulses (Ikonen 1999: 55, Krappe 1996). In addition, autistic people's brains have difficulties with receiving sense impulses, and these sense impulses are intractable to process (Ikonen 1999: 55). One typical feature which is seen in autistic people is that they have trouble with using language as a tool of communication. (Ikonen 1999: 60). To be specific, they expect people knowing same things as they do, and they hardly feel it necessary to express their thoughts. Additionally, autistic people focus on words, and they understand things literally. Thus, they have problems with, e.g., noticing humour, sarcasm, and idioms (Siikanen 1996, Jordan 2005: 115, Aarons and Gittens 1999: 66, Lawrence 2019: 15). Another characteristic feature of people with autism is echolalia, and it includes, for instance, imitating the words or the intonation of other people (Aarons and Gittens 1999: 65, Tager-Flusberg 2000: 186). An imitation includes an immediate response to one's speech with similar aspects. Furthermore, even though autism is a life-long disability, the symptoms can change over time (Ikonen 1999: 56), and with a thorough rehabilitation, the life quality of autistic people can be ameliorated (Krappe

1996). Usually, people with autism have other additional difficulties as well such as other developmental disorders, mental issues, epilepsy, or hearing disability (Ikonen 1999: 56, Wire 2005, Jordan 2005: 119, Aarons and Gittens 1999: 19). Additionally, there are some disabilities that are subclasses for autism such as Rett syndrome or Asperger's syndrome which include aspects from autism, but also other aspects like specific hand movements (Ikonen 1999: 13, 69, Aarons and Gittens 1999: 18). Even though there are problems, autistic people can be intellectually anything from severely restricted to incredibly talented (Ikonen 1999: 56), and it is completely possible to have a good academic progress even with an autism (Aarons and Gittens 1999: 85).

As mentioned above, linguistic problems can be one of the symptoms of autistic people, and it may cause some issues to language learning. Autistic people may have an adequate vocabulary, but it contains mostly only substantives (Siikanen 1996). Verbs are usually acquired through their own actions, and other word classes are difficult to learn since they contain abstract things (Siikanen 1996). For example, prepositions can be difficult for autistic people since they can be clear in a learnt context, but it is complicated to apply prepositions elsewhere (Aarons and Gittens 1999: 65). Thus, linguistic learning starts with naming substantives and verbs before abstract things can be acquired (Siikanen 1996). As far as language learning in a classroom is concerned, many aspects can become as an issue when autistic people are being taught since, for instance, they have problems in confronting changes, they might do exercises in a slow manner, they can be upset if their seat is already taken, and they can be distracted from many things such as a humming or too high room temperature (Wire 2005). Additionally, it is hard to utilize verbal instructions for autistic people (Krappe 1996). Therefore, integration to a classroom is succeeded only through a very careful planning, and it requires that there is a personal assistant. Furthermore, it is possible that autistic people are unwilling to work in pairs, and they prefer working alone even though learning a FL can indeed raise autistic pupil's consciousness of social skills (Wire 2005). In FL learning verbal communication is valuable, and therefore, one needs to be patient with

autistic people (Wire 2005), and teachers should teach skills needed in communicating (Jordan 2005: 115).

### **3.2 The frame means for facilitating language learning for people with autism**

When autistic people are being taught, there is a need for taking specific aspects into account. A personal syllabus emphasizes important factors such as the importance of things that are being taught and the students' earlier capability (Ikonen 1999: 156). In addition, teachers need to adapt their teaching to meet the needs and skills of an autistic learner (Rämä, Pirttimaa, Ojala, Pesonen and Kontu 2019) since it is impossible to create one differentiation method that would be suitable for all autistic learners (Lawrence 2019: 15). Nevertheless, there are multiple teaching methods that are planned for autistic people, and one of them is TEACCH (Treatment and Education of Autistic and related Communication Handicapped Children) method (Ikonen 1999: 176, 181). TEACCH is a comprehensive method that assures structured teaching such as suitable time, teacher, and a communication tool (Ikonen 1999: 176, Krappe 1996, Aarons and Gittens 1999: 84). Furthermore, permanency and routines are important to autistic people (Ikonen 1999: 159, Wire 2005). Routines can be used in teaching to support autistic learners since if, e.g., a teacher changes seats or the teacher is replaced, it can be an enormous stress factor for autistic learner (Lawrence 2019: 16-17). Another stress factor may be if an autistic learner is paired with "the coolest" pupil or with the one who knows everything, and therefore, teachers should avoid this kind of pairing (Wire 2005).

There are different options for teaching autistic people, and some helping aspects have been found. Autistic people can be placed into general teaching classes, special classes or own classes which are designed for autistic people (Krappe 1996), and the collaboration between parents and professionals is important for enabling the suitable

support (Krappe 1996). Additionally, the knowledge of autism is inevitable for the teacher since there is a need for understanding, for instance, the varying behaviours, needs and autistic pupils' way to learn (Krappe 1996, Wire 2005). Regarding aspects that might help, autistic learners learn the best when things that are about to learn are given clearly (Williams 2010: 153). The usage of pictures might also help since the meaning of a picture is clearer than the meaning of words because words have a phonological form whereas a picture has only a meaning (Siikanen 1996). When actions are picture-based, it is easier for autistic people to function independently (Siikanen 1999). Additionally, visual clues can be used, and unnecessary stimulus can be diminished in teaching groups that are planned for autistic people (Krappe 1996). When there are pupils in the class whose interactional skills are in different levels, a high-class pedagogic interaction can be used to avoid frustrations that affect learning capability (Rämä et al. 2019). As mentioned earlier, there can be a deficiency in flexibility amongst autistic people. Still, it can be seen also as an advantage when teaching a FL since autistic people like routines and repetition which can be applied to teaching grammar (Wire 2005). Thus, it is possible to give a favourable foundation for an autistic learner as grammar follows specific regulations. Summing up teaching of an autistic learner, autistic voices (2019) have couple wishes that they wish teachers would know. Autistic learner Zoe wants to remind teachers that they need to be assisted too, and autistic children are expecting special advice about what they need to do. Autistic learner Jack wants to remind that he is aware about being different than others, and it makes him vexed. He learns more effectively when he can move, even though it would mean him being on the floor. Lastly, autistic young adult Isaac wants to remind that negative can be turned into positive by processing it.

## **4 THE PRESENT STUDY**

In this section, the present study is explained. The chapter exposes what was the aim of this study, and what were the research questions. Then, it presents the data collection including the methods and the participants. Lastly, the methods of analysis are revealed.

### **4.1 Aim and research questions**

The aim of the present study was to find out how dyslexia and autism affect learning and studying English as a foreign language. Additionally, one aim was to discover that how possible difficulties could be alleviated. There were three main questions that were investigated.

1. What kinds of experiences do people with dyslexia or autism have about learning English as a foreign language?
2. If people with dyslexia or autism feel that studying English is hard, why is it hard?
3. In which ways learning English as a foreign language could be alleviated for people with dyslexia or autism?

Expected outcomes based on the previous research are that people with dyslexia and autism have some kinds of difficulties with learning English as a foreign language. The reasons for the difficulties are varying, but one of the most common reasons has been revealed to be a linguistic deficiency overall with both dyslexic and autistic people. For alleviating these problems, it is expected that using different kinds of approaches in teaching is beneficial.

## 4.2 Data collection

The data of this study was collected by using a questionnaire (see Appendix). A questionnaire was used as a method since according to Sapsford (2007: 109-110), self-completed questionnaires save time, give a large sample, and enable that questions are always presented similarly for each participant. Additionally, self-completed questionnaires enable that participants can share sensitive information completely anonymously if they are hardly desirous to share their flaws face-to-face which in turn, increases the validity of the research (Fowler 2009: 74, 82). In addition, the questionnaire was completed on the internet. Balch (2010: 5, 22, 43) states that internet questionnaires have low costs, they are undemanding to create and send, and internet enables that participants can affect their screen settings. Hence, it is possible to change, for instance, font size. All in all, the present questionnaire was a descriptive cross-sectional questionnaire which was made for arbitrary participants that represented the target group. Descriptive cross-sectional questionnaires afford primary information about the participants and phenomenon (Fink 1995: 64).

The questionnaire consisted of five multiple-choice and closed-ended questions and one open-ended question. It was designed for adults with dyslexia or autism since they have already experience about learning. Thus, they might have already found out how they feel about learning English as a foreign language, and they possibly have found means that help them to learn. The questionnaire was conducted in online Facebook groups which were designed for people with specific difficulties. It was emphasized that participants needed to have dyslexia or autism. Due to online survey method, it was possible to get participants from different locations in Finland. Since the study was conducted in Finland, also the questionnaire was in Finnish to enable as comprehensive understanding as possible for the participants. The questionnaire was administered using a Webropol survey tool, and the answers were completely anonymous. Regarding participants, 68 participants attended completely voluntarily.

### 4.3 Methods of analysis

The data was analyzed by using statistical methods, interpretations and categorizations since the data was both quantitative and qualitative. The multiple-choice and closed-ended questions gave quantitative data which needed to be analyzed using graphs and numbers. Figures were based on the result percentages and many quantitative data questions included an optional choice which needed to be analyzed by interpreting them. In turn, the open-ended questions gave qualitative data which needed interpretations and categorizations to benefit from them. Interpretations needed understanding about the used language, and the meanings were needed to connect as results. They were also categorized when the results were analyzed. The interpretations needed to be separated for seeing in which things learners can influence by themselves.

As results were got from the questionnaire, they were transferred from Webropol to Excel by using an automatic tool. The tool changed the results into graphs and charts. In the options, where the participants were able to select their own answers, the results came as sentences. The graphs gave straight answers to what were participants' thoughts on issues. Scales were changed in the graphs to reach hundred percent for making them clearer. The sentences, as for, needed interpretation and understanding what they meant by saying specific aspects. Therefore, the answers were thoroughly read through, and especially those answers that were mentioned frequently were selected into this thesis. When the most frequent answers were connected, they created an entity of the answers.



# 5 RESULTS

In this section, the results are presented. The answers are divided into three groups. There were 29 respondents that had only dyslexia, 30 respondents that had only autism, and 9 respondents had both autism and dyslexia. In the first result section, it is explained whether the respondents were able to select only one or multiple choices.

## 5.1 The results of people with dyslexia

In the question number two the respondents were asked “how studying English has felt”. The respondents were able to select multiple answers. The question gained scattered answers. As Figure 1 represents, 14% of dyslexic respondents felt studying English pleasant, 69% felt it tough, none of them thought it felt light, 45% thought it felt frustrating, for 7% it felt effortless, 24% experienced it as unpleasant, and 17% selected another option. In another option, the participants were allowed to create their own answers. Own answers were, for instance, that it felt arduous or chaotic.

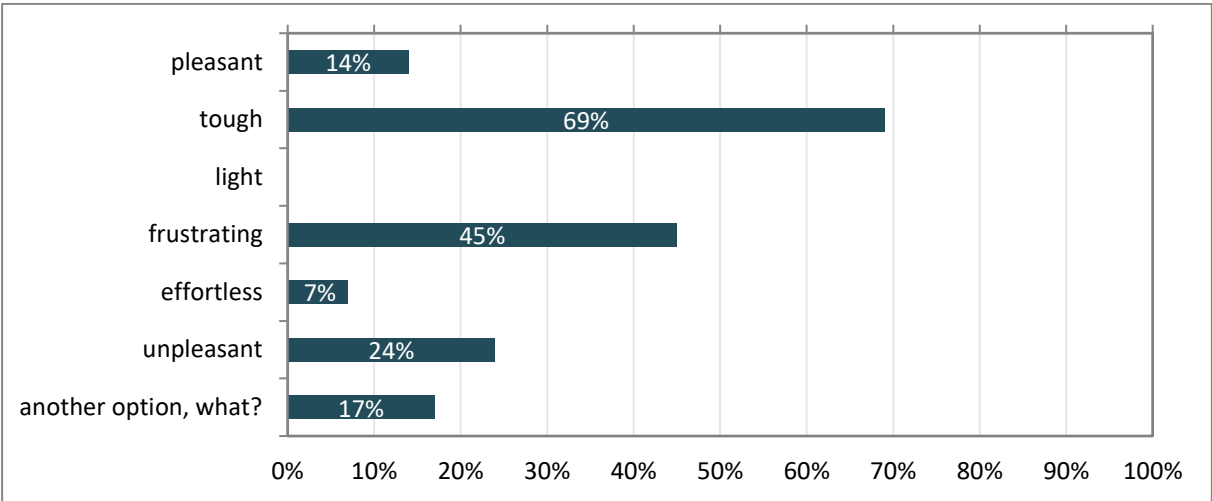


Figure 1. Dyslexic respondents' (n = 29) views on how studying English has felt

The third question asked whether English is easy, quite easy, quite difficult, or difficult for the respondents. Here the respondents were able to select only one option. Figure 2 demonstrates that 3% of dyslexic respondents thought that studying English is easy, 14% replied quite easy, 28% responded quite difficult, and majority, 55%, felt that it is difficult.

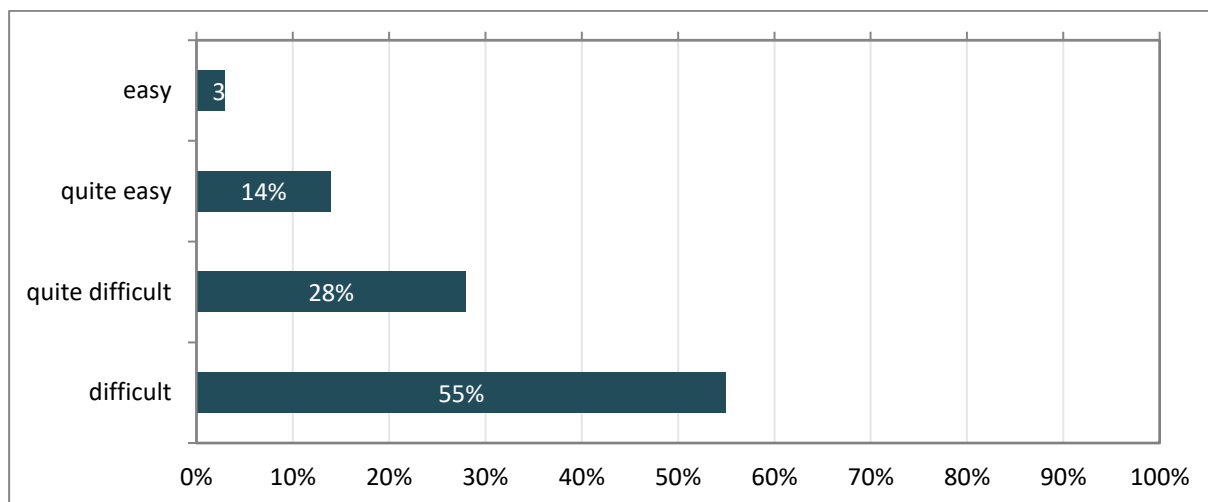


Figure 2. Dyslexic respondents' (n = 29) views on if English is easy, quite easy, quite difficult, or difficult

The question number four was designed only for people that responded to the previous question quite hard or hard. The question was about defining why learning English is quite difficult or difficult. Of all dyslexic respondents, 13% thought that learning English is difficult since they have problems with Finnish as well, 54% said that memorizing is an issue, 63% replied that words are difficult to pronounce, 13% had difficulties with concentrating, 50% had problems with adapting learned things into the different contexts, and 29% replied some other reason (see Figure 3). One frequent reason was that it is hard to write words since they are pronounced in a different way than they are written.

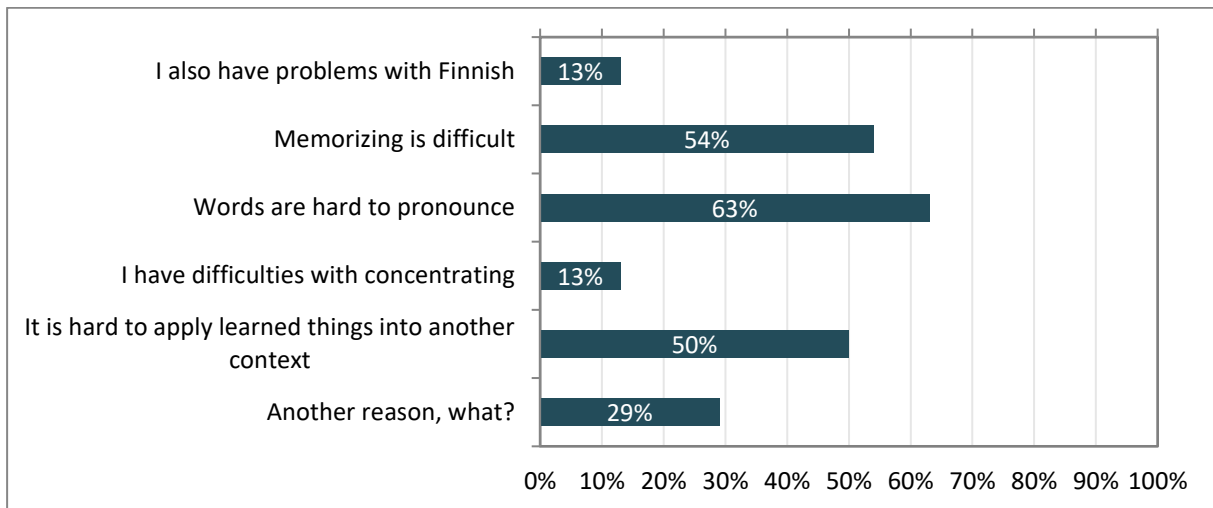


Figure 3. Dyslexic respondents' (n = 29) thoughts on why learning English is quite difficult or difficult

In the fifth question, the respondents could again select multiple choices, and the helpful tools for learning were investigated. As Figure 4 demonstrates, a vast majority of the dyslexic respondents, 72%, benefitted from visual aids, 55% found out that mnemonics are useful, none of them felt it helpful to use some specific fonts or font sizes, 17% were helped by own curriculum, 28% benefitted from routines, and 28% answered another option. In another option, the participants were again able to formulate own answers. Other tools were, e.g., repetition, watching TV series, and social media.

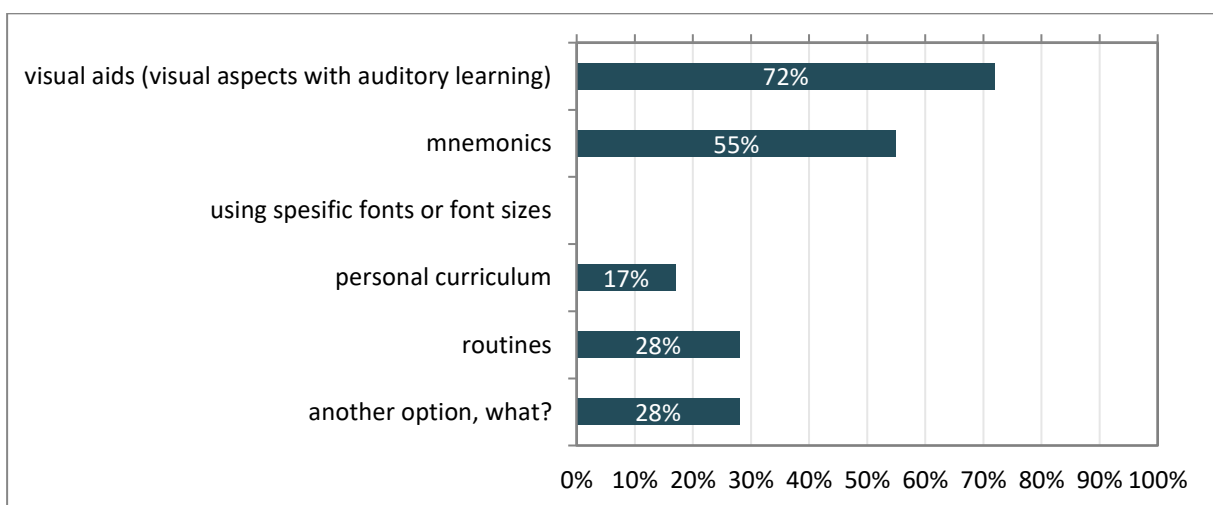


Figure 4. Dyslexic respondents' (n = 29) views on what has been beneficial for them when learning English

The last question was optional. The question was that “in which ways one’s English learning could be facilitated”. The question gained multiple different answers. The dyslexic respondents hoped that a teacher would support students, and students should rather be allowed to remain quiet than be forced to read aloud in front of other students. They hoped also that there would be another adult supporting teaching and learning methods should be emphasized more. In addition, the respondents hoped that students would get support early, and exercises would be individualized. Lastly, some respondents benefitted from interesting topics, repetition, and mnemonics, and therefore, they hoped that there would be more interesting texts, mnemonics, and repetition.

### 5.2 The results of people with autism

Of the autistic respondents, 47% felt that studying English has been pleasant, 20% felt it tough, 30% thought it was light, 23% felt it frustrating, 30% thought it is effortless, for 3% it felt unpleasant, and 17% selected some another option (see Figure 5). Other options were, for instance, interesting and challenging.

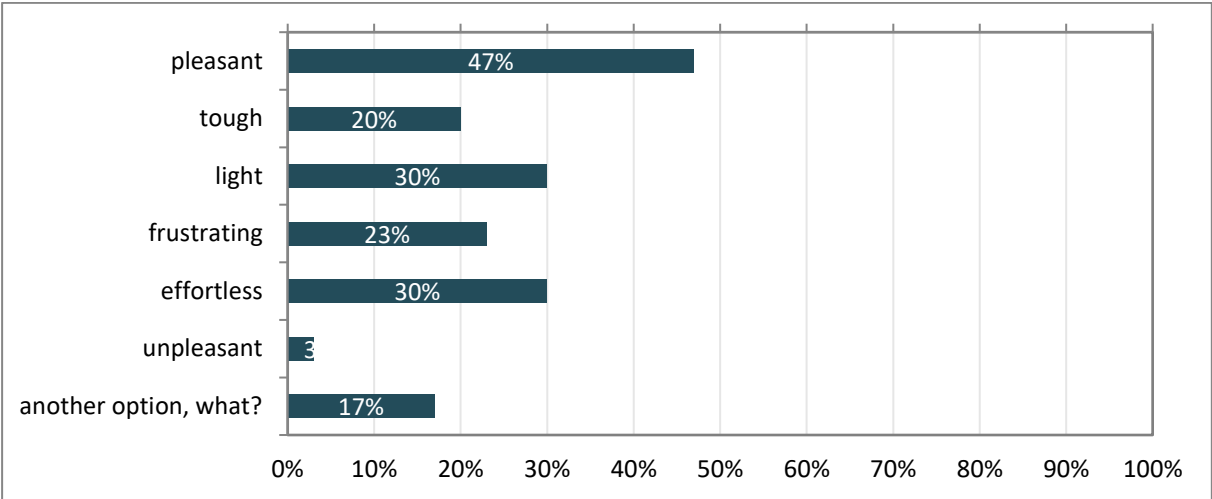


Figure 5. Autistic respondents' (n = 30) views on how studying English has felt

As Figure 6 shows, 43% of the autistic respondents thought that studying English is easy, 30% thought it is quite easy and 27% answered that it is quite hard. None of the respondents selected that it is hard.

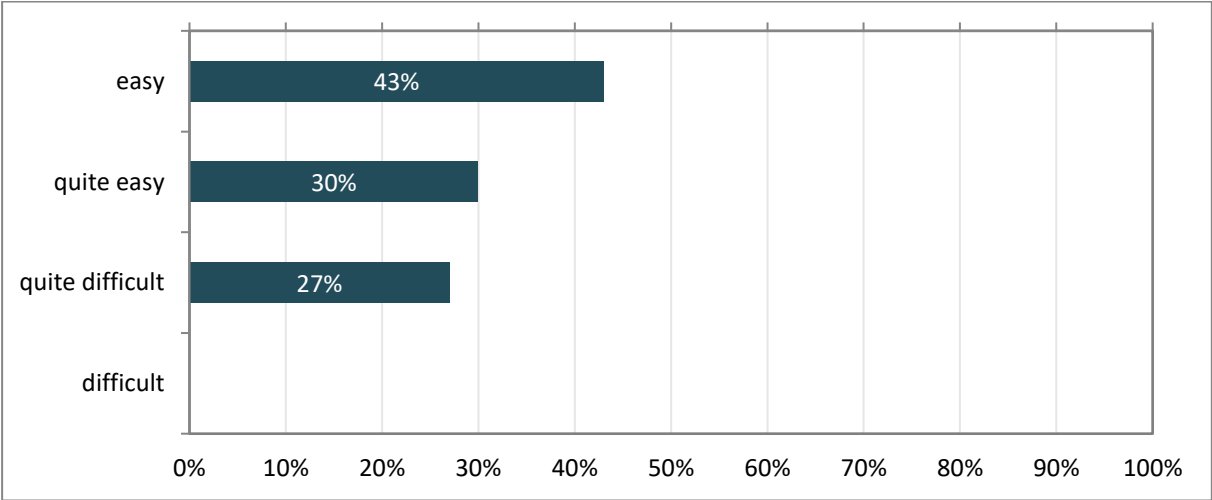


Figure 6. Autistic respondents' (n = 30) views on if English is easy, quite easy, quite difficult, or difficult

Regarding to autistic respondents' answers, 10% thought that studying English is quite hard or hard since they had problems with studying Finnish as well, 60% responded that memorizing makes it more difficult, 40% thought that words are hard to pronounce, 70% had difficulties to focus, 20% had difficulties to adapt learned things into different contexts, and 40% had some another reason (see Figure 7). Other reasons that respondents have replied are, e.g., that they are trying to find logic and similarities between Finnish and English, and the words are hard to differentiate from the speech.

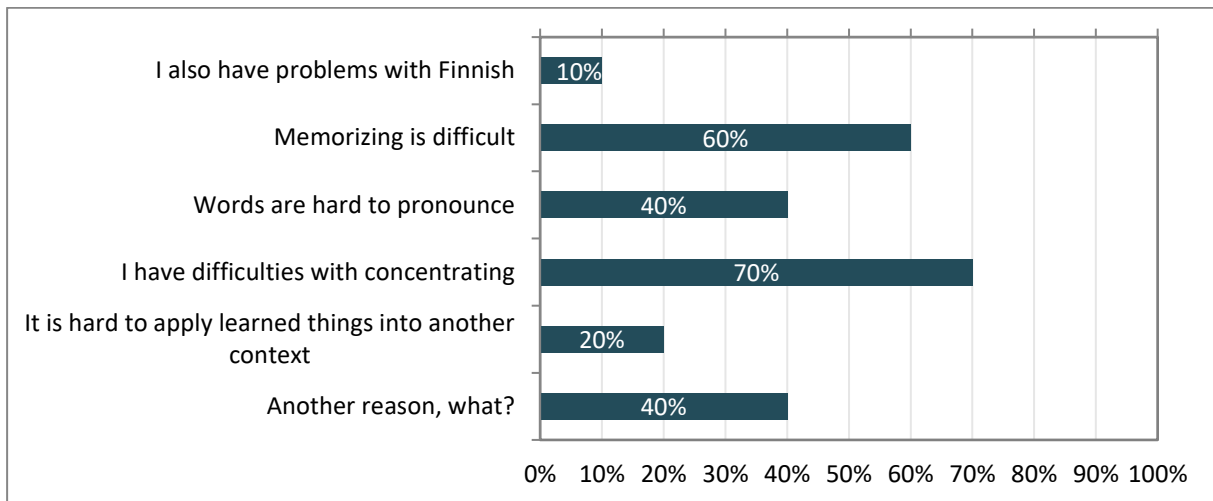


Figure 7. Autistic respondents' (n = 30) thoughts on why learning English is quite difficult or difficult

Of the autistic respondents, 67% replied that visual support is helpful, 50% benefitted from mnemonics, 13% found it helpful to favour some specific fonts or font sizes, 3% were helped by own personal curriculum, 23% benefitted from routines, and 43% replied some other reason (see Figure 8). Reasons were, for instance, using interesting topics, reading out loud, watching movies and series, and talking with foreigners.

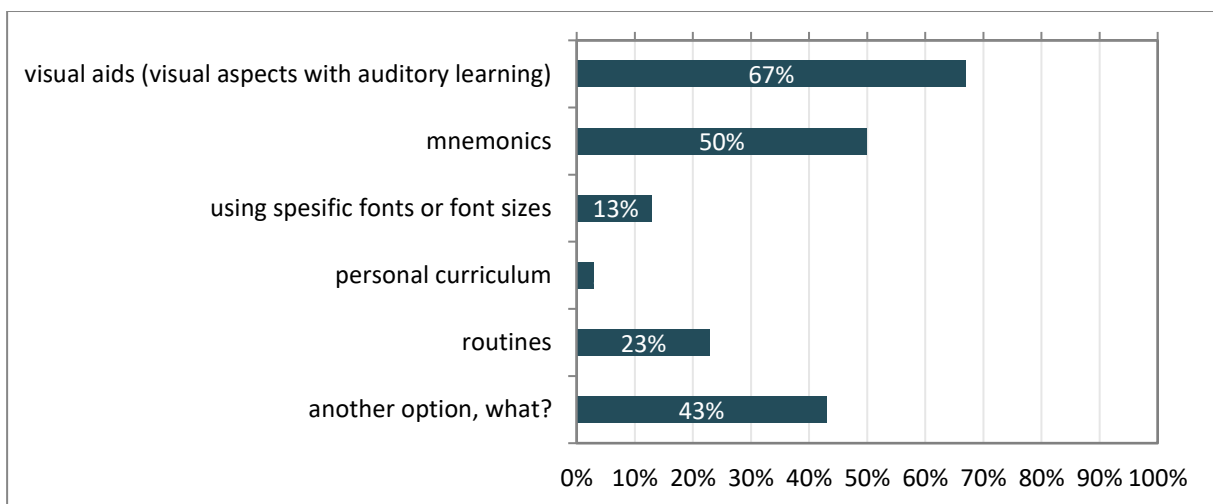


Figure 8. Autistic respondents' (n = 30) views on what has been beneficial for them when learning English

The last question about supporting aspects gained many responses. Some of the autistic respondents wished that there would be less group work, and that one should be able to work on their own. Some respondents hoped that teachers would give more justification why specific things are learned, and things should be based on learners' interests. There were wishes that learning should be made pleasant, and exercises should be diverse. For instance, usage of pictures and body movements were suggested. In addition, some respondents emphasised that teaching should be more personal, and they should have a choice to decline reading aloud for anyone except teacher or pair. One respondent had also experienced derision from the teacher, and another respondent hoped that students would get 100% support from the teacher in order to avoid getting harassed by someone.

### 5.3 The results of people with dyslexia and autism

As Figure 9 represents, none of respondents that had both dyslexia and autism, replied that English was pleasant or light. Instead, 56% felt it tough, 56% thought it was frustrating, 11% felt it unpleasant and 33% replied something else. There were though 22% who thought that it has been effortless. Other reason that occurred was that it is impossible.

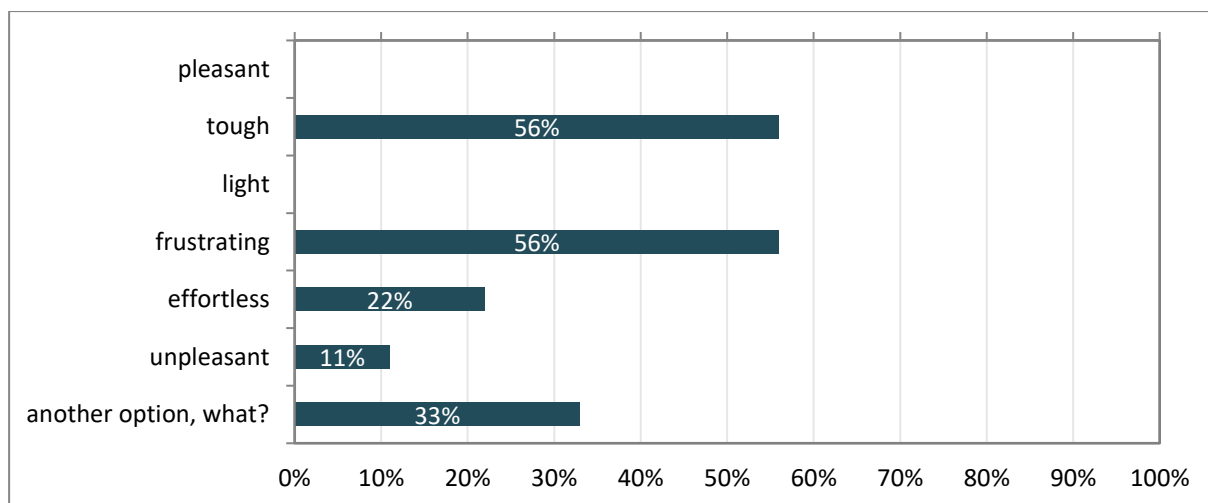


Figure 9. Dyslexic-autistic respondents' (n = 9) views on how studying English has felt

For 11% of the dyslexic-autistic participants studying English is easy, 11% thinks that it is quite easy, 33% think that it is quite difficult, and nearly half, 45%, thinks that is difficult (see Figure 10).

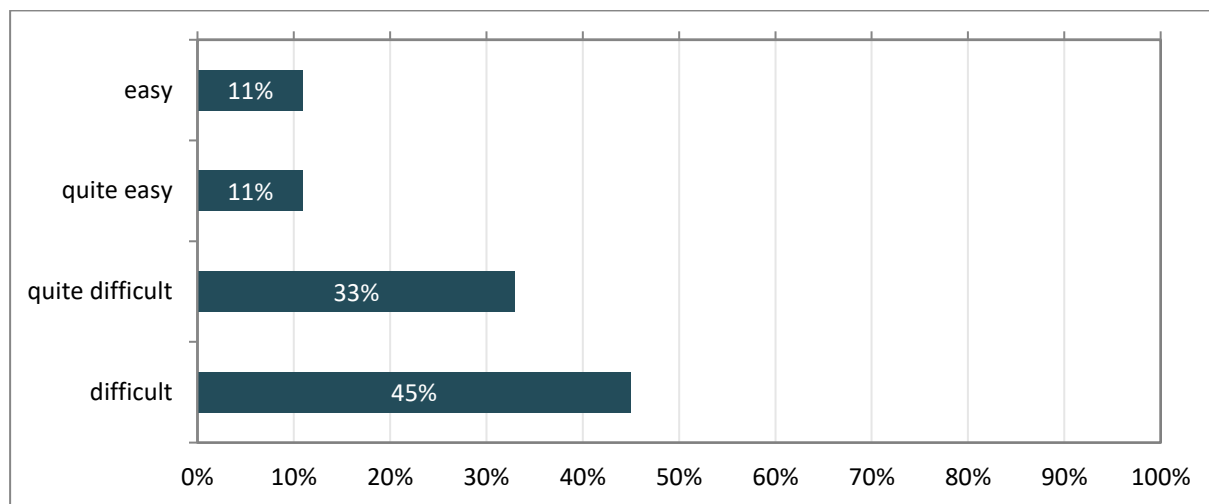


Figure 10. Dyslexic-autistic respondents' (n = 9) views on if English is easy, quite easy, quite difficult or difficult

As can be seen from Figure 11, 13% of the dyslexic-autistic respondents thought that learning English is hard since they had problems with Finnish, for half, 50%, of the respondents memorizing was a trouble, 38% thought that the words are hard to pronounce, 63% had problems with concentrating, 50% had problems with converting things into another contexts, and 63% had some other answer. Those were among other answers that words are pronounced in a different manner than they are written, and grammar feels difficult.



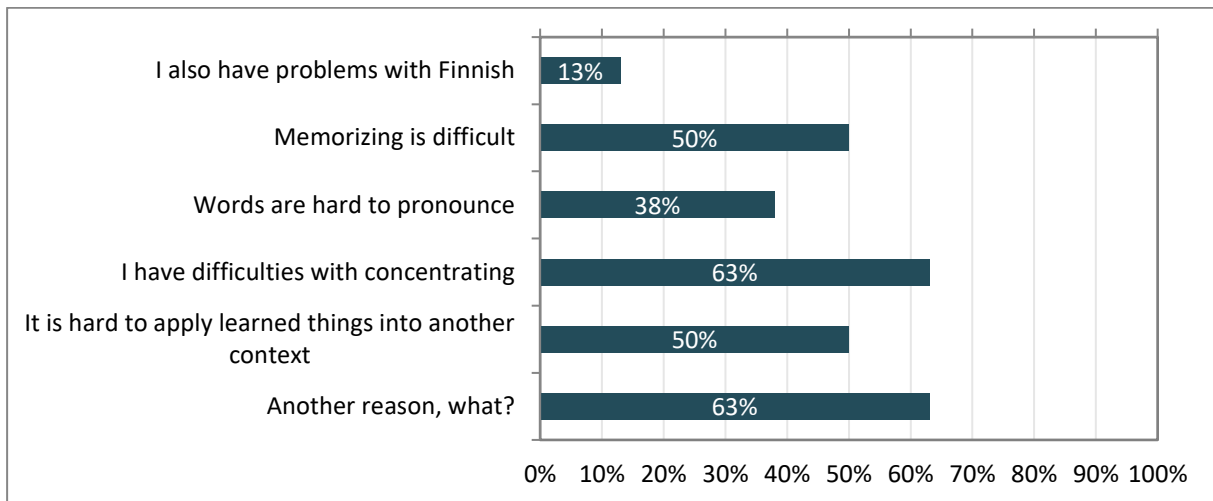


Figure 11. Dyslexic-autistic respondents' (n = 9) thoughts on why learning English is quite difficult or difficult

For 44% of the dyslexic-autistic respondents visual aids are helpful, 11% benefitted from mnemonics, none of them found out using specific fonts or sizes beneficial, 44% benefitted form an own curriculum, 22% felt routines helpful, and 56% replied some other tool (see Figure 12). Tools were, for instance, games and remedial education.

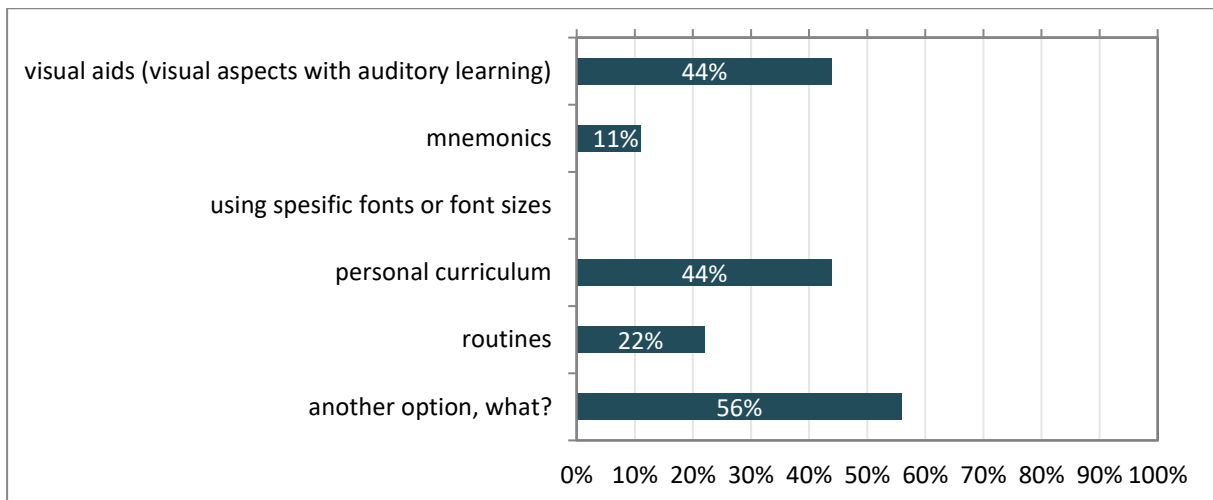


Figure 12. Dyslexic-autistic respondents' (n = 9) views on what has been beneficial for them when learning English

The last question got some responses. One dyslexic-autistic respondent hoped that things would be explained thoroughly, and in a manner that everyone understands. One respondent also wished that the words would be colour-coded, and the subjects would be interesting. In addition, the respondents hoped that they would have a choice to remain quiet instead of being forced to read aloud in front of class, and that they would be given an opportunity to get a personal curriculum.

## 6 DISCUSSION AND CONCLUSION

In this chapter, the results of the present study are compared with the previous studies that were discussed in the background sections. Additionally, some reasons for the results are contemplated.

### 6.1 Results of dyslexic participants' answers compared with the previous studies

The results of the present study revealed that most of the dyslexic respondents felt studying English being tough and frustrating, and the clear majority replied that studying English is difficult. As dyslexia is a disorder that impedes reading and spelling (Nijakowska 2010), it is inevitable that problems occur, and they make learning more difficult. As some of the respondents stated, learning English has been frustrating for them. According to Nijakowska (2010: 75), complicated learning may bring negative attitudes towards learning, and hence, it is understandable that some respondents have felt frustration. Most common reasons for the difficulties were that the words are hard to pronounce, memorizing is difficult, and that it is hard to apply learned things into another context. In the previous research, Reid (2007: 11) states that dyslexic learners have complications with pronouncing words that include, for instance, 'th' and 'ph' sounds. This issue might apply to different sounds as well since the participants of the present study arose that words are pronounced differently as they are written, and it creates difficulties for them. In matter of memorizing words, Kormos and Smith (2012: 80) indicate that people who have learning disorders might have problems with maintaining words in their memory. Furthermore, even though in the previous study Nijakowska (2010: 67) reports that if learners struggle with their native language, it might create difficulties into foreign language learning, the effect of own native language was hardly seen as an issue in the present study. It might be either

that the dyslexic participants had hardly any issues with their own native language or that they felt it hardly as a hindering issue.

When speaking of things that helped dyslexic respondents, as Nijakowska (2010: 126), Kormos and Smith (2012: 126) and Reid (2007: 41) mention, the vast majority thought that visual aids with support of auditory learning are one of the most beneficial aspects. Another most beneficial aspect was the usage of mnemonics. Kormos and Smith (2012: 131) and Turner and Pughe (2005: 26) report mnemonics as an aspect that might help learners to remember words. Additionally, watching series with spoken English came across as beneficial in the present study. As for, one remarkable dissimilarity to previous studies was that none of the dyslexic respondents replied using specific fonts or font sizes would be beneficial. In the previous research, Kormos and Smith (2012: 109-110) and Rello and Baeza-Yates (2017) report how specific fonts and font sizes could be beneficial. Furthermore, the last question about how English learning could be facilitated for dyslexic learners, gained replies that they should be able to rather remain quiet than be forced to read in front of other students, they should get different kinds of support, subjects should be interesting, and the repetition and mnemonics should be used. It has been revealed already in the previous studies that the students should be allowed to be silent in front of other students if they desire so (Nijakowska 2010: 147, Turner and Pughe 2005: 60). Additionally, the reiteration has been noticed to be beneficial in learning (Nijakowska 2010, Reid 2007: 41).

## **6.2 Results of autistic participants' answers compared with the previous studies**

Surprisingly, most autistic respondents selected learning English being pleasant, light, and effortless. Approximately three students out of four would describe it being easy or quite easy while one student would describe it being quite difficult instead of difficult. In the previous studies, it was stated that autistic people might have problems

with language learning since they have linguistic problems (Siikanen 1996). These discrepancies might be result of that autism is a disorder with diverse symptoms. Those respondents who said learning English being difficult, described that it is difficult to focus and memorize things. It has been observed in the previous studies that, for instance, some noises and changes might distract autistic learner (Wire 2005). Some autistic respondents of the present study replied as well that they are trying to find some logic and similarities, and pronouncing English creates difficulties. Again, also the visual aids and mnemonics were seen as beneficial. Pictures as a helpful aid have been found in the previous research and some autistic respondents see them beneficial since the meaning of a picture is clearer than meaning of words (Siikanen 1996). Many respondents replied as well that watching movies and series has helped them with English learning. In the previous research, the most noticeable aid was permanency and routines (Wire 2005, Ikonen 1999: 159), but in the present study they were hardly seen to be helpful. Lastly, when asking how their learning could be facilitated, the respondents replied that they should be able to work on their own, and learning should be made pleasant with different things such as interesting topics and divergent exercises. Previous research reveals that autistic learners usually wish to work alone (Wire 2005). Additionally, one reason that occurred was that teachers should explain more why specific things are learned. This might be since according Siikanen (1996), Jordan (2005: 115), Aarons and Gittens (1999: 66) and Lawrence (2019: 15), autistic learners process things literally and concentrate on words. This could create a need to understand why specific things need to be learned.

### **6.3 Results of people who have dyslexia and autism compared with the previous studies**

Most of the respondents that had both dyslexia and autism thought that learning English has been hard, frustrating, and impossible. When asking if English learning has been easy, quite easy, quite difficult, or difficult, 78% replied quite difficult or difficult.

This might be since as above-mentioned, dyslexic learners have difficulties with reading and spelling, and autistic people have linguistic deficiencies. These two disorders combined give a miserable base for language learning. For the autistic-dyslexic respondents, the results were to some extent a combination of results of those participants who had only autism or dyslexia. Many respondents had selected multiple reasons why it is difficult, and there occurred that memorizing is difficult, words are hard to pronounce, they have difficulties with concentrating, and it is hard to apply learned things into new contexts. Many of these issues were discussed in the previous sections but additionally, the autistic people may have difficulties into applying learnt things into another context since some things, for instance prepositions, might be abstract (Siikanen 1996, Aarons and Gittens 1999: 65). In addition, it created difficulties that words are pronounced differently than they are written, and grammar is difficult. On the contrary, some research claim that grammar could be autistic learners' strength since grammar follows routines (Wire 2005). Visual aids and own personal curriculum were seen as beneficial, and many respondents replied that playing games has been useful. The significance of personal curriculum has been earlier discovered since there are specific teaching programs for autistic learners such as TEACCH (Ikonen 1999: 176, 181), and it has been pointed out that teachers should adapt teaching to satisfy autistic students' needs (Rämä et al. 2019). When thinking further aspects that could be beneficial, using color codes, interesting subjects, and explaining things in words of one syllable felt helpful. The usage of colours has been revealed as an aspect that might help especially dyslexic learners (Kormos and Smith 2012: 110, 120), and for the autistic learners, the clear explanations have been studied to be possibly a beneficial aid (Williams 2010: 153). Additionally, respondents hoped that they would get an opportunity to decline from reading in front of others, and this was an aspect that was also a hoped aspect amongst those learners who had only dyslexia.

## 6.4 Conclusion

When thinking of learning in point of view of dyslexic and autistic learners, there are couple things that could be considered when planning teaching for them. The majority of dyslexic respondents felt studying English tough, frustrating, and difficult, while the majority of autistic respondents felt it pleasant, light, and effortless. On the contrary, most of those respondents who had dyslexia and autism, felt studying English hard, frustrating, and impossible. The present study focused on finding out the reasons behind the possible difficultness and aimed to search possible aids for alleviating the issues. Especially visual aids, watching movies and series in English and mnemonics were seen as alleviating aspects. These researched aspects help teachers and learners to design learning in a manner that suits for dyslexic and autistic learners. The study was conducted online in specific Facebook groups, and thus, it hardly could be accessed by everyone. Additionally, it possibly favoured those, who were able to use Facebook, and hence, the study was quite limited especially when considering autistic learners. The results of the present study have similarities with the previous research, but since the amount of participants was in an exploratorily manner narrow, further research is needed in order to get generalizable results. In the future, the research could be conducted in another manner than as an internet survey for being able to reach more versatile sampling. Also, one aspect that could be further researched is difference between genders since there was hardly any information about how gender affects the results.

## REFERENCES

- Aarons, M., and Gittens, T. (1999). *The handbook of autism*. Routledge: Taylor & Francis Group.
- Autistic voices (2019). *What We Wish Teachers Knew About Autism*. In C. Lawrence (ed.), *Teacher Education and Autism: A Research-Based Practical Handbook*. London: Jessica Kingsley Publishers, 162-164.
- Balch, C.V. (2010). *Internet Survey Methodology*. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Fink, A. (1995). *How to Design Surveys*. California: SAGE Publications, Inc.
- Fowler, F.J. (2009). *Survey Research Methods*. California: SAGE Publications, Inc.
- Ikonen, O. (1999). *Autismi – teoriasta käytäntöön*. Jyväskylä: Atena.
- Jordan, R. (2005). *Autistic spectrum disorders*. In A. Lewis and B. Norwich (eds.), *Special Teaching for Special Children*. Maidenhead: Open University Press, 110-122.
- Krappe, K. (1996). *Autistinen lapsi koululaisena: TEACCH-ohjelman sovellusta*. In M-L. Ponsila and T. Siirilä (eds.), *Lasten kielihäiriöt ja autismi: haasteita kuntoutukselle ja opetukselle*. Helsinki: Suomen logopedis-foniatrinen yhdistys, 41-44.
- Kormos, J., and Smith, A.M. (2012). *Teaching Languages to Students with Specific Learning Differences*. Bristol: Multilingual Matters.
- Lawrence, C. (2019). *Understanding autism*. In C. Lawrence (ed.), *Teacher Education and Autism: A Research-Based Practical Handbook*. London: Jessica Kingsley Publishers, 15-22.
- Nijakowska, J. (2010). *Dyslexia in the Foreign Language Classroom*. Bristol: Multilingual Matters.
- Reid, G. (2007). *Dyslexia 2nd edition*. London: Continuum International Publishing Group.
- Rello, L., and Baeza-Yates, R. (2017). *How to present more readable text for people with dyslexia*. *Universal Access in the Information Society* 16(1), 29-49.
- Rämä, I., Pirttimaa, R., Ojala, T., Pesonen, H., and Kontu, E. (2019). *Teacher Training for Children with Autism Spectrum Disorders in Finland*. In X. Hu and E. Kärnä (eds.), *Educating Students with Autism Spectrum Disorder in China and Finland*. Springer: *New Frontiers of Educational Research*, 183-195.
- Sapsford, R. (2007). *Survey research*. Lontoo: SAGE Publications Ltd.
- Siikanen, M. (1996). *Autistisen lapsen puheterapia on kokonaisvaltaista*. In M-L. Ponsila and T. Siirilä (eds.), *Lasten kielihäiriöt ja autismi: haasteita kuntoutukselle ja opetukselle*. Helsinki: Suomen logopedis-foniatrinen yhdistys, 34-40.
- Tager-Flusberg, H. (2000). *Understanding the language and communicative impairments in autism*. In L.M. Glidden (ed.), *International Review of Research in Mental Retardation - vol. 23*. San Diego: Academic Press, 185-205.
- Turner, E. and Pughe, J. (2005). *Dyslexia and English*. London: David Fulton Publishers.



- Williams, D.L. (2010). Developmental language disorders: learning, language, and the brain. San Diego: Plural Pub, 127-156.
- Wire, V. (2005). Autistic Spectrum Disorders and learning foreign languages. *Support for Learning* 20 (3), 123-128.

## APPENDIX

Tervetuloa vastaamaan kyselyyn! Kysely sisältää 6 kysymystä ja aikaa niihin vastaamiseen kuluu noin 2–3 minuuttia. Kyselyyn vastaaminen on täysin vapaaehtoista. Kyselyyn vastaamalla vakuutat antamasi tiedot oikeiksi ja annat luvan käyttää antamiasi tietoja Jyväskylän yliopistossa tehtävään kandidaatintutkielmaan. Lisäksi sinun tulee olla täysi-ikäinen. Kyselyssä rastita sinua koskevin vaihtoehto / sinua koskevimmat vaihtoehdot.

### 1. Minulla on diagnosoitu...

- lukihäiriö
- autismi
- molemmat

### 2. Englannin kielen opiskelu on tuntunut minulle...

- miellyttävältä
- raskaalta
- kevyeltä
- turhauttavalta
- vaivattomalta
- inhottavalta
- Joku muu, mikä? \_\_\_\_\_

### 3. Koen, että englannin kielen opiskelu on minulle...

- helppoa
- melko helppoa
- melko vaikeaa
- vaikeaa

### 4. Jos vastasit edeltävään kysymykseen, että opiskelu on helppoa tai melko helppoa, voit ohittaa tämän kysymyksen. Jos valitsit, että se on melko vaikeaa tai vaikeaa, miksi englannin kielen oppiminen tuntuu vaikealta?

- Minulla on suomen kielenkin kanssa vaikeuksia
- Muistaminen tuottaa hankaluuksia
- Sanoja on hankala ääntää
- Minulla on vaikeuksia keskittyä
- Minun on vaikeaa muuntaa opittuja asioita eri konteksteihin
- Joku muu syy, mikä? \_\_\_\_\_

**5. Mitkä apukeinot olet kokenut itsellesi hyödylliseksi englannin kielen opiskelussa?**

visuaalinen tuki (näköhavainto kuulon tukena)

muistisäännöt

tietyn fontin ja/ tai fonttikoon suosiminen

oma henkilökohtainen opetussuunnitelma

rutiinit

Joku muu, mikä? \_\_\_\_\_

**6. Millä tavoin lukihäiriöisten tai autististen oppijoiden englannin kielen oppimista voitaisiin mielestäsi helpottaa?**

\_\_\_\_\_

**Kiitos vastauksestanne!**