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Teaching Foreign Languages to Learners with Dyslexia in Greece: An Overview of Theory and Practice

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Abstract

The present article summarizes various aspects of teaching foreign languages to learners with dyslexia. In particular, although it is a matter examined broadly around the world, in Greece there are few references and limited research in this field. Furthermore, the lack of foreign language teachers' training in the field of specific learning difficulties in Greece is also examined. In this article, we refer to first language and foreign language(s) acquisition and focus on the situation in Greece, where the first foreign language taught in schools is English and the second foreign language is either German or French. Furthermore, we examine the mechanisms of (second) foreign language acquisition as well as the factors that influence this process. Additionally, we consider the appropriate time to start learning a foreign language, as well as various reading and spelling difficulties that the learners with dyslexia face during this process. A very dominant factor that influences learners with dyslexia and causes difficulties in reading and spelling is the phonological awareness (phonemic awareness and syllable awareness). Due to the cross-linguistic transfer of this skill, we mention ways to improve phonological awareness skills in the first language and in the foreign language(s).

Keywords: *Foreign Language Learning, Dyslexia, Spelling, Reading, Phonological Awareness, Teacher Training*

Introduction

Learning a foreign language is a complex process that requires the development and interaction of various skills. This process is based on the skills the learners have developed in the first language

(phonological, orthographic, syntactic, and semantic) (Sparks et al., 2006). Thus, the effectiveness of a learner's skills in the first language has a significant effect on the success or failure of learning a foreign language (Simon, 2000). When learning a second or additional foreign language, the first language as well as the first foreign language influence the learners. Moreover, dyslexia is a parameter that affects foreign language learning significantly.

In Greece, there is an evident need for teacher training in this field as well as the connection between educational practice and educational research. In the past few years, this situation has changed due to the Undergraduate and Postgraduate Programmes of the Aristotle University of Thessaloniki, the Hellenic Open University of Patras, and the National and Kapodistrian University of Athens, however, there is still a great need for primary research in this field (Tsakalidou, 2020, 2022).

Dyslexic learners should be taught with appropriate methods by trained teachers, who are well informed about their difficulties and the nature of dyslexia. They should also be specialized in the implementation of appropriate curricula and have the ability to choose the right exercise material for each phase of language teaching (Mavrommati, 2004; Tsakalidou, 2020, 2022).

First Language and Foreign Language(s) in the Greek Context

We should point out that in the Greek educational system, the foreign language teacher is always confronted with mixed-ability classrooms. It is almost impossible to have a classroom of beginners in terms of language knowledge and learning experience (Tsakalidou, 2022). This fact cannot be ignored, as it constitutes many difficulties and in many cases learner-centered adjustments are necessary. Some aspects of diversity in the classroom are connected to cultural and social experiences, knowledge and cognitive requirements, general skills, learning styles and strategies, preferred ways of learning, motivation, and performance, cause of success and failure, personality traits, gender, age, and self-confidence, talents, inclinations, and interests (Scholz, 2007; Chatzichristou, 2011).

The first language is the reference point when learning a (second) foreign language and it should be actively involved in this process, as it is essentially the language base, to which the learners will add new elements, units, and structures of a new language (cross-linguistic influence). A question that the teacher should keep in mind is: *What elements, units, or structures of the first language and/or of the first foreign language can be linked and associated with elements, units, and structures of the second foreign language (transfer bridges)?* For example, international words or loanwords in the new language can be used when learning vocabulary. Equally important is the connection of existing learning experiences and processes with the first language and the first foreign language in order to adapt and expand them based on the learners' needs while learning the second foreign language (Neuner, 2004).

Consequently, second foreign language teachers use the learners' existing cognitive and emotional experiences, while learning their first language and their first foreign language, in order to facilitate the second foreign language learning (Hufeisen, 2004). Nevertheless, learners who have already conquered a foreign language show a different level of readiness in comparison to learners who only know one language (i.e. their first language) (Cenoz, 2001).

A language taught and learnt as a second foreign language differs in many ways from a language taught and learnt as a first foreign language (Hufeisen, 2003). It is needless to say, that first foreign language learners are considered to have no experience as far as foreign languages are concerned. On the contrary, when they start learning a second foreign language, they are considered more capable, due to the previous experience, while learning the first foreign language. They are usually older, with more developed intellectual and metacognitive abilities, and, therefore, have a better understanding of the second foreign language system (Cenoz, 2001; Hufeisen, 2000).

Other factors that may influence learners with dyslexia, while learning a second foreign language, are (a) the learners' level and recent involvement with the specific language; (b) the self-assessment process as far as their knowledge is concerned; (c) emotional factors, which may function differently while learning a second foreign language compared to the first foreign language; (d) metalinguistic awareness, which is usually more developed in the case of a second foreign language and therefore speeds up the process of learning; (e) the learners' interactive skills, which are improved in the case of multilingual learners; (f) the conscious or subconscious language strategies already acquired in the first language and the first foreign language; (g) the awareness of their learning style (Papadopoulou, 2006).

Learners with Dyslexia and Foreign Languages

There are two different views concerning the appropriate time for learners with dyslexia to start learning a foreign language: (a) when they have already overcome the greatest difficulties in the first language and have conquered it to a great extent, and (b) at an early age (Lanzinger, 2006). The second position is supported by Sambanis (2002), who suggests, that growing up the ability to recognize and distinguish sounds is lost, and therefore learning foreign languages at an early age is important for learners with dyslexia. Moreover, appropriate teaching methods should be used. The ideal age to learn a foreign language is from ten to sixteen years (Lanzinger, 2006).

Specifically at ten years of age, learning German or French as a second foreign language mainly concerns older students with the corresponding cognitive abilities. Therefore, the teacher can add new knowledge to the existing knowledge derived from the first foreign language. In the case of the Greek learners, the first foreign language is English and it belongs to the same language family as German, i.e. Germanic languages (Tsakalidou, 2020, 2021a). Learners who are taught German after English have a noticeable advantage in terms of vocabulary, as there are numerous similarities between the two Germanic languages (Rösler, 2012). Whereas, French belongs to the romance languages, like Italian and Spanish.

The learners who have difficulties in a specific language system (i.e. in their first language or their first foreign language) in reading, writing, spelling, grammar, listening, or reading comprehension, may also have difficulties while learning a second foreign language. The degree of difficulty may depend, mainly, on the nature and severity of the learners' deficits in the various areas mentioned above (Ganschow & Schneider, 2006a). Some errors that foreign language learners make are systematic and, in many cases, they derive from the first language. The learners' development follows a specific path, although each learner's speed and efficacy are quite different

(Mitchell & Myles, 2004).

According to the Linguistic Coding Deficit Hypothesis (LCDH), the difficulty in learning a foreign language stems from the learner's deficits in the first language. These difficulties are to be found in various oral or written manifestations of a foreign language. Another characteristic is the phonological awareness deficit (Ganschow & Sparks, 2000; Ganschow et al., 1998; Sparks, 1995; Sparks et al., 1989). Nevertheless, successful learning of a foreign language is directly affected by the performance in the first language. Also, each learner's weaknesses and strengths are transferred from the first language to the foreign language(s) (Sparks & Ganschow, 1991). For instance, if a learner has phonological deficits in the first language, then he/she is likely to have similar difficulties in the foreign language, as well (Simon, 2000).

The terms *Foreign Language Learning Disability (FLLD)*, *Foreign Language Disability* and *Disability for Foreign Language Learning* are incorrect, as their use is not supported by research data (Sparks, 2006, 2009; von Suchodoletz, 2007a). Specifically, learners with diagnosed learning difficulties do not always have difficulties learning a foreign language and do not face significantly different difficulties in comparison to their peers without learning difficulties. Also, the difficulties while learning a foreign language can range from very severe to very mild (Sparks, 2006).

In order to be able to examine the effect of dyslexia on learning a foreign language, we must examine the factors that influence successful foreign language learning for learners that do not have learning difficulties (for example phonological awareness skills). Learners with dyslexia have a particularly difficult time learning a foreign language in reading, spelling, and grammar while learning new words appears to be a far less difficult task (Helland & Kaasa, 2005; von Suchodoletz, 2007b).

When learning a foreign language, dyslexic learners have difficulties with phonological processing, long-term memory, serialization, and visual and auditory discrimination (Crombie, 2000, 1997; Tsakalidou, 2020). Adjustments in the teaching method help learners with dyslexia overcome specific obstacles. Improving the learners' phonological awareness is considered to play an important role in this endeavor, whereas practice with syllables and later with sounds is suggested (Dal, 2008; Ganschow & Sparks, 1995).

Difficulties in learning a foreign language are usually first encountered in the first language at the level of (a) phonological awareness or spelling, (b) syntax, (c) semantics (Ganschow & Schneider, 2006b). For example, learners who have phonological difficulties in the first language, also demonstrate difficulties memorizing the sounds of letters, pronouncing, reading, or spelling words in a foreign language (Tsakalidou, 2020).

Reading and Spelling Difficulties of Learners with Dyslexia

Learning to read is a complex process, which requires the transliteration of written symbols, or graphemes, into spoken sounds, or phonemes. Despite the complexity of written language, the majority of children, after proper teaching, manage to learn how to read with relative ease. However, a small percentage of children have a special difficulty in acquiring these skills. This difficulty is often considered unexpected, as it can appear in children with a high IQ-score, who do very well in other tasks. These children are called dyslexic and according to recent estimates

constitute 3% to 10% of the population (Snowling, 2000).

Due to the lack of research in the Greek context about dyslexia in the foreign language lesson and the stereotype that dyslexic learners almost exclusively make errors like mirror writing, anagrams, permutations, omissions of letters, etc., it is particularly difficult to locate dyslexic learners with a high IQ score (Nikolopoulos, 2007). According to research in the field of specific learning difficulties, however, it is concluded that support is necessary and the avoidance of writing is not a solution, as it is widely recommended in Greece. On the contrary it should be used as a tool to support learners with dyslexia (Tzouriadou, 2010).

When a child, who does not have dyslexia, reads, the brain automatically correlates the letters seen on the book page with the corresponding sounds and then puts them in the correct order to form a word. Whereas, the brain of a child with specific learning difficulties cannot complete this process correctly and tries to read using other brain areas that, in fact, can serve in the production of speech or its semantic processing. Therefore, for learners with dyslexia, the areas of the brain that are responsible for coding and decoding language and are related to writing, reading, and comprehension seem to be under-functioning or malfunctioning (Tsakalidou, 2020, 2022).

Specifically, the Wernicke's area, located in the temporal lobe of the left cerebral hemisphere and related to language comprehension and semantic processing is under-functioning. The Angular Gyrus, a region of the inferior parietal lobe, at the anterolateral region of the occipital lobe, transfers and correlates the information recorded by visual stimuli with the stored phonemes, i.e. the sounds, of a language, and is also under-functioning. On the contrary, the Broca area, the center of speech production, may be over-functioning. It is located in the left cerebral hemisphere and controls the articulation and coding of speech (Livaniou, 2004).

Learners with dyslexia have great difficulty in learning reading and spelling, due to the inability to master the alphabetic principle, i.e. the ability to use the grapheme-phoneme correspondence to decipher words (Gounti, 2010). They also acquire the ability for correct phonemic-graphemic translation much later than their peers.

In the very processes of reading and writing, they follow the indirect path, i.e. the analysis of the word in sounds or graphemes, or writing/reading the word based on the grapheme-phoneme correspondence. They are unable to access the sight vocabulary, which is compiled with great difficulty in their case. It takes a lot of time and the contribution of multisensory teaching methods and various aids. However, the number of known words always seems to be incomparably lower compared to their non-dyslexic peers (Frith, 1980; Tsakalidou, 2020).

Usually, learners with dyslexia learn grammar and spelling rules as information, i.e. they acquire this knowledge, but at the moment they are writing, they have difficulty applying what they know in theory. They tend to write words automatically and correctly only when those words exist in their memory as "pictures" (sight vocabulary).

Grammar rules help learners process the written language systematically and categorize the words they encounter, but this does not always mean that the orthographic elements of these words are coded in their memory. The words that are in their sight vocabulary are spelled correctly, because they are recalled from memory and not because the rules are applied while writing. If

learners with dyslexia are asked to spell a word, which does not exist in their sight vocabulary, they cannot recall it and so they write it completely randomly in most cases (Mavrommati, 2004).

Learners with dyslexia often make spelling errors, which remain persistent despite the systematic efforts of teachers and parents. Over the years, of course, they improve, and make fewer and fewer spelling and reading errors. Nevertheless, there is always a significant difference to their peers (Tsakalidou, 2020, 2021a, 2021b).

The most common errors concern: (a) phonological processing errors, (b) writing a word according to its sound, without following the spelling rules, (c) difficulty in recognizing or analysing a word in its compounds, (d) words that are not used often, (e) words with no grapheme-phoneme correspondence, (f) frequently used functional words (for example *from*, *do*, *not*, *are*, etc.), (g) additions, subtractions, replacements and transpositions of syllables and letters (Porpodas, 2003).

Spelling difficulties are much more significant than reading difficulties, because while reading dyslexic learners usually apply compensatory strategies more easily. The most common strategy is to use words that have already been memorised or to replace the word they do not know with one that they know. Thus their vocabulary is limited and this affects their reading comprehension and writing skills (Snowling et al., 2000; Tsesmeli & Seymour, 2006). Also, while many learners with dyslexia manage to reach a satisfactory level in reading, they continue to have significant difficulties in spelling, even well into adulthood (Joshi & Carreker, 2009; Kotoulas et al., 2004).

Some characteristics of their handwriting are: (a) too small or too large letters, (b) unequal letter size, (c) uneven lowercase or capital letters, (d) misspelled letters, and (e) difficulty keeping letters on the line (Politt et al., 2004).

Phonological Awareness and Learners with Dyslexia

Phonological awareness is directly connected to spelling and reading and is a skill that exhibits cross-linguistic transfer and allows one to move from the transparent to the opaque elements of a language and to acquire the ability to manipulate the basic structural elements of words, such as syllables (syllable awareness) and phonemes (phonemic awareness) (Porpodas, 2003). Phonemic awareness is a particularly difficult ability to acquire for preschool children as well as for learners with specific learning difficulties (Mahfoudhi & Haynes, 2009; Oakhill & Kyle, 2000).

Due to the causal relationship between phonological awareness and the ability to read and write, its assessment should be considered one of the first and basic actions of every teacher in the case of specific learning difficulties (Bahr et al., 2009; Berninger et al., 2010; Bruck & Treiman, 1990; Caravolas et al., 2005; Cassar et al., 2005; Castles & Coltheart, 2004; Chitiri & Porpodas, 2002; Porpodas, 2003; Tsakalidou, 2020).

Furthermore, the development of phonemic awareness skills contributes to the improvement of reading comprehension and spelling, while the development of syllable awareness contributes to the improvement of reading accuracy and speed (Diamanti, 2010a, 2010b; Høien et al., 1995; Papadopoulos, 2008). Structured teaching and the development of phonological awareness improve word recognition skills, spelling, and reading comprehension (Aidinis & Nunes, 2001; Mahfoudhi & Haynes, 2009) and are essential when teaching reading and writing (Mavrommati,

1995).

Phonological awareness is acquired relatively quickly in transparent orthographies, like German (Tsakalidou, 2020). For example, Goswami (2006) and Lanzinger (2006) emphasize the difficulty of English-speaking learners in phonological coding compared to their German-speaking peers.

However, if the first language and the foreign language differ significantly at all levels, the learners are required to re-master a different phonological system so that they can successfully perform the task of word recognition and master the mechanisms of reading (Gounti, 2010). Various ways to practice phonological awareness skills are summarized in Table 1 (Tsakalidou, 2020, 2021a).

Table 1

Ways to Practice Phonological Awareness Skills

	Phonemic awareness	Syllable awareness	Rhyme awareness
Discrimination	<i>Phoneme discrimination tasks</i>	<i>Syllable discrimination tasks</i>	<i>Rhyme discrimination tasks</i>
Subtraction/ Deletion	<i>Phoneme deletion tasks</i>	<i>Syllable deletion tasks</i>	<i>Rhyme deletion tasks</i>
Addition	<i>Phoneme addition tasks</i>	<i>Syllable addition tasks</i>	<i>Rhyme addition tasks</i>
Segmentation	<i>Phoneme segmentation tasks</i>	<i>Syllable segmentation tasks</i>	<i>Rhyme segmentation tasks</i>
Blending	<i>Phoneme blending tasks</i>	<i>Syllable blending tasks</i>	<i>Rhyme blending tasks</i>
Reversal	<i>Phoneme reversal tasks</i>	<i>Syllable reversal tasks</i>	<i>Rhyme reversal tasks</i>

Approaches to Improve the Performance of Learners with Dyslexia Learning a Foreign Language

Some approaches aim to improve the performance of learners with dyslexia, who are learning a foreign language, such as (a) focusing on improving phonological awareness, (b) teaching the key points of the Curriculum, omitting additional/unnecessary information, (c) slowing down the teaching pace, (d) reducing the amount of vocabulary, (e) using continuous assessment, (f) applying the multisensory teaching method and (g) differentiating instruction (Ginsberg & Wlodkowski, 2000; Schwarz, 1997; Tsakalidou, 2020, 2022).

It is also important to note that high achievement rates in the first language contribute positively to foreign language learning, as phonological awareness and phonological processing skills are transferred from one language to another (Nijakowska, 2012). Therefore, it is important to improve the skills, in which the learners need support, in the first language and/or first foreign language as well (Tsakalidou, 2020, 2021a, 2021b).

Furthermore, the positive transfer of language knowledge (pronunciation, grammar, vocabulary, writing, spelling) from one language to another, results in the correct use of certain forms in the foreign language. In case of an error occurring during this transfer, we speak of a negative transfer. If the learner's difficulties are transferred from one language to another, the strategies used effectively in the first language can also be used, just as effectively, in the foreign language learning process (Schneider, 2009).

Regarding teaching a second foreign language and subsequent foreign languages, the further development of knowledge and language awareness is achieved through the transfer of knowledge from the first language and the first foreign language to the second foreign language or additional foreign language(s) (Karagiannidou, 2006).

Initially, it is advisable to recognize various similarities in the typology of the first language, the first foreign language, and the second foreign language. For example, Greek learners, whose first foreign language is English, already know the alphabet, when they start learning German. They only need to learn which letters are pronounced differently and which combinations exist in the second foreign language (diphthongs, etc.). Also, there are many similarities in the word etymology. At an early stage of learning a second foreign language, the learners can recognize the similarities on their own by making assumptions. The teacher must constantly encourage learners to compare, formulate hypotheses and discuss them. Later, differences will arise, which will, also gradually, be integrated into the already existing knowledge (Tsakalidou, 2020, 2021a).

Conclusion

Learning a second foreign language occurs through the assimilation of grammar rules, while using the first language as a frame of reference. The development of a positive atmosphere in the foreign language classroom is a key factor of success. Learners should be rewarded and encouraged to express their questions and address their errors as a process of seeking new knowledge and taking initiatives (Tsakalidou, 2020). Creating a familiar, stress-free, and supportive learning environment ensures the application of individual learning techniques. The appropriate individualized time and rhythm should be given so that the learners can experiment with the language, and better understand and assimilate knowledge (Balasi et al., 2006). The foreign language teacher should try to create an inclusive classroom, respecting the needs of learners with dyslexia and their peers, keeping them motivated and happy, so that they can enjoy the process of learning and have the best possible results (Tsakalidou, 2020). In conclusion, it is important to stress the necessity of teacher training as far as teaching foreign languages to learners with dyslexia and other learning difficulties is concerned, so that they have tools to make the necessary and effective adjustments in their teaching method and be able to recognise and support the difficulties the dyslexic learners face.

References

- Aidinis, A., & Nunes, T. (2001). The role of different levels of phonological awareness in the development of reading and spelling in Greek. *Reading and Writing: An Interdisciplinary Journal*, 14, 145-177. <https://doi.org/10.1023/A:1008107312006>.

- Bahr, R. H., Silliman, E. R., & Berninger, V. W. (2009). What spelling errors have to tell about vocabulary learning. In C. Wood & V. Connelly (Eds.), *Reading and Spelling: Contemporary perspectives* (pp. 109-129). New York: Routledge.
- Balasi, E., Antonakaki, T., & Simpsa, T. (2006). Teaching foreign languages at an early age: teaching, new technologies, evaluation, education and teacher training. In K. Zouganeli (Ed.), *Proceedings of the Panhellenic Conference "Foreign Languages in Public Compulsory Education"* (pp. 188-199). Athens: Pedagogical Institute & University of Athens (31/03-02/04/2006). Retrieved from: http://www.pi-schools.gr/download/news/pract_sinedr_xenes_glosses.pdf. Date of last access: 12.08.2022.
- Berninger, V. W., Abbott, R. D., Nagy, W., & Carlisle, J. (2010). Growth in phonological, orthographic and morphological awareness in Grades 1 to 6. *Journal of Psycholinguistic Research*, 39, 141-163. <https://doi.org/10.1007/s10936-009-9130-6>.
- Bruck, M., & Treiman, R. (1990). Phonological awareness and spelling in normal children and dyslexics: The case of initial consonant clusters. *Journal of Experimental Child Psychology*, 50, 156-178. [https://doi.org/10.1016/0022-0965\(90\)90037-9](https://doi.org/10.1016/0022-0965(90)90037-9).
- Caravolas, M., Volin, J., & Hulme, C. (2005). Phoneme awareness is a key component of alphabetic literacy skills in consistent and inconsistent orthographies: Evidence from Czech and English children. *Journal of Experimental Child Psychology*, 92(2), 107-139. <https://doi.org/10.1016/j.jecp.2005.04.003>.
- Cassar, M., Treiman, R., Moats, L., Pollo, T. C., & Kessler, B. (2005). How do the spellings of children with dyslexia compare with those of nondyslexic children? *Reading and Writing: An Interdisciplinary Journal*, 18, 29-47. <https://doi.org/10.1007/s11145-004-2345-x>.
- Castles, A., & Coltheart, M. (2004). Is there a causal link from phonological awareness to success in learning to read? *Cognition*, 91, 77-111. [https://doi.org/10.1016/s0010-0277\(03\)00164-1](https://doi.org/10.1016/s0010-0277(03)00164-1).
- Cenoz, J. (2001). The effect of linguistic distance, L2 status, and age on cross-linguistic influence in third language acquisition. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Crosslinguistic influence in third language acquisition* (pp. 8-20). Tonawanda, NY: Multilingual Matters.
- Chatzichristou, H. G. (Ed.), (2011). Social and emotional education at school. A programme to promote mental health and learning in the school community. Educational material II: Primary Education. Issue 9. *School and students with special educational needs*. Athens: Typothito.
- Chitiri, F., & Porpodas, C. (2002). *Phonological awareness and its relations to learning of reading and spelling as well as to linguistic ability and comprehension of Greek*. Research paper. Laboratory of Cognitive Analysis of Learning. Language and Dyslexia. University of Patras.
- Crombie, M. (1997). The Effects of Specific Learning Difficulties (Dyslexia) on the Learning of a Foreign Language in School. *Dyslexia*, 3, 27-47. [https://doi.org/10.1002/\(SICI\)1099909\(199703\)3:1<27::AIDDYS43>3.0.CO;2-R](https://doi.org/10.1002/(SICI)1099909(199703)3:1<27::AIDDYS43>3.0.CO;2-R).
- Crombie, M. (2000). Dyslexia and the Learning of a Foreign Language in School: Where Are We Going? *Dyslexia*, 6, 112-123. [https://doi.org/10.1002/\(SICI\)10990909\(200004/06\)6:2<112::AIDDYS151>3.0.CO;2-D](https://doi.org/10.1002/(SICI)10990909(200004/06)6:2<112::AIDDYS151>3.0.CO;2-D).
- Dal, M. (2008). Dyslexia and Foreign Language Learning. In G. Reid, A. Fawcett, F. Manis, & L. Siegel (Eds.), *The SAGE Handbook of Dyslexia* (pp. 439-456). London: SAGE Publications Ltd.
- Diamanti, B. (2010a). Spelling skills and difficulties of children with dyslexia. In A. Mouzaki & A. Protopapas (Eds.), *Spelling. Learning and disorders* (pp. 277-285). Athens: Gutenberg-Psychology/33.
- Diamanti, B. (2010b). Spelling development and phonological awareness. In Mouzaki, A. & Protopapas, A. (Ed.), *Spelling. Learning and disorders* (pp. 107-120). Athens: Gutenberg-Psychology/33.
- Frith, U. (1980). Unexpected spelling problems. In U. Frith (Ed.), *Cognitive processes in spelling* (pp. 495-515). London: Academic Press.
- Ganschow, L., & Schneider, E. (2006a). *At-Risk Students and the Study of Foreign Language in School*. Factsheet. Baltimore: The International Dyslexia Association (IDA).
- Ganschow, L., & Schneider, E. (2006b). Assisting Students with Foreign Language Learning Difficulties in School. In International Dyslexia Association (Ed.), *Perspectives on Language and Literacy. Special Edition*, 32. Baltimore: International Dyslexia Association. Retrieved from: <http://www.idonline.org/article/22725/>. Date of last access: 10.08.2022.
- Ganschow, L., & Sparks, R. L. (1995). Effects of direct instruction in Spanish phonology on the native-language skills and foreign-language aptitude of at-risk foreign-language learners. *Journal of Learning Disabilities*, 28(2), 107-120. <https://doi.org/10.1177/002221949502800205>.
- Ganschow, L., & Sparks, R. L. (2000). Reflections on Foreign Language Study for Students with Language Learning Problems: Research, Issues and Challenges. *Dyslexia*, 6, 87-100. [https://doi.org/10.1002/\(SICI\)1099-0909\(200004/06\)6:2<87::AID-DYS153>3.0.CO;2-H](https://doi.org/10.1002/(SICI)1099-0909(200004/06)6:2<87::AID-DYS153>3.0.CO;2-H).

- Ganschow, L., Sparks, R., & Javorsky, J. (1998). Foreign language learning difficulties: A historical perspective. *Journal of Learning Disabilities*, 31(3), 248-258. <https://doi.org/10.1177/002221949803100304>.
- Ginsberg, M. B., & Wlodkowski, R. J. (2000). *Creating highly motivating classrooms for all students: A schoolwide approach to powerful teaching with diverse learners*. San Francisco: Jossey-Bass.
- Goswami, U. (2006). Phonological awareness and literacy. In K. Brown (Ed.), *Encyclopedia of Language and Linguistics* (pp. 489-497). Oxford: Elsevier Ltd.
- Gounti, P. (2010). Teaching English as a Foreign Language to Dyslexic Students: An Intervention Programme. *Research Papers in Language Teaching and Learning*, 1(1), 135-147.
- Helland, T., & Kaasa, R. (2005). Dyslexia in English as a second language. *Dyslexia*, 11, 41-60. <https://doi.org/10.1002/dys.286>.
- Høien, T., Lundberg, I. Stanovich, K. E., & Bjaalid, I. K. (1995). Components of phonological awareness. *Reading and Writing* 7(2), 171-188. <https://doi.org/10.1007/BF01027184>.
- Hufeisen, B. (2000). A European perspective: tertiary languages with a focus on German as L3. In J. W. Rosenthal (Ed.), *Handbook of undergraduate second language education* (pp. 209-230). New York: Routledge.
- Hufeisen, B. (2003). L1, L2, L3, L4, Lx – alle gleich? Linguistische, lernerinterne und lernerextern Faktoren in Modellen zum multiplen Spracherwerb. *Zeitschrift für Interkulturellen Fremdsprachenunterricht* 8(2/3), 97-109.
- Hufeisen, B. (2004). A brief introduction to the linguistic foundations. In B. Hufeisen, & G. Neuner (Eds.), *The Plurilingualism Project: Tertiary Language Learning-German after English* (pp. 7-12). Strasbourg: European Centre for Modern Languages. Council of Europe Publishing.
- Joshi, M. R., & Carreker, S. (2009). Spelling. Development, assessment and instruction. In G. Reid (Ed.), *The Routledge companion to dyslexia* (pp. 113-125). London: Routledge.
- Karagiannidou, E. (2006). Teaching and learning German as a second foreign language in primary school. *Pedagogical Review*, 42, 23-41.
- Kotoulas, V., Panteliadou, S., & Botsas, G. (2004). Characteristics of students with Learning Disabilities. In S. Panteliadou, A. Patsiodimou & G. Botsas (Eds.), *Learning difficulties in secondary education* (pp. 31-52). Volos: Adaction A. E.
- Lanzinger, I. M. (2006). *Legasthenie in der Fremdsprache Englisch*. Erster Österreichischer Dachverband Legasthenie. Dyslexia Research Center.
- Livaniou, E. (2004). *Learning difficulties and behavioral problems in the normal classroom*. 2nd edition. Athens: Kedros Publications.
- Mahfoudhi, A., & Haynes, C. (2009). *Phonological awareness in reading disabilities remediation: Some general issues*. In G. Reid, G. Elbeheri, G. J. Everatt, J. Wearmouth, & D. K. Knight (Eds.), *The Routledge Companion to Dyslexia* (pp. 139-157). London: Routledge.
- Mavrommati, D. (1995). *The preparation of the Dyslexia Treatment Program*. Athens: Greek Letters.
- Mavrommati, D. (2004). *Dyslexia. Nature of the problem and treatment*. Athens: Hellenic Letters Publications.
- Mitchell, R., & Myles, F. (2004). *Second Language Learning Theories*. (2nd ed.). London: Hodder Arnold.
- Neuner, G. (2004). The concept of plurilingualism and tertiary language didactics. In B. Hufeisen, & G. Neuner (Eds.), *The Plurilingualism Project: Tertiary Language Learning-German after English* (pp. 13-34). Strasbourg: European Centre for Modern Languages. Council of Europe Publishing.
- Nijakowska, J. (2012). Individual Differences in Language Learners with Dyslexia. In M. Pawlak (Ed.), *Second Language Learning and Teaching. New Perspectives on Individual Differences in Language Learning and Teaching* (pp. 289-303). Berlin: Springer.
- Nikolopoulos, D. (2007). Reading Difficulties/Dyslexia: Key Points, Dilemmas and Educational Practice. In E. Makri-Mpotsari (Ed.), *Issues of School Classroom Management* (pp. 8-28). Athens: Pedagogical Institute.
- Oakhill, J., & Kyle, F. (2000). The relation between phonological awareness and working memory. *Journal of Experimental Child Psychology*, 75, 152-164. <https://doi.org/10.1006/jecp.1999.2529>.
- Papadopoulos, T. (2008). Learning difficulties and didactic differentiation in the general school. In E., Tzelepi-Giannatou (Ed.), *Issues of School Classroom Management*. Volume II (pp. 23-40). Athens: Pedagogical Institute.
- Papadopoulou, C. O. (2006). Teaching German as a second foreign language in Greek primary education. In A., Kavvadia, M., Tzoannopoulou, A., Tsagalidis (Eds.), *Proceedings of the 13th International Conference on Applied Linguistics: New Directions in Applied Linguistics, Thessaloniki, 11-14 December 2003, Volume 9* (pp. 660-672).
- Politt, R., Pollock, J., & Waller, E. (2004). *Day-to-day Dyslexia in the classroom* (2nd ed.). London: Routledge.
- Porpodas, K. D. (2003). *Learning and its difficulties (A Cognitive Approach)*. Patras: Porpodas K. D.
- Rösler, D. (2012). *Deutsch als Fremdsprache. Eine Einführung*. Stuttgart: Verlag J. B. Metzler.

- Sambanis, M. (2002). Fremdsprachenunterricht bei LRS-Kindern in der Primarstufe. In G. Schulte-Körne (Hg.), *Legasthenie: Zum aktuellen Stand der Ursachenforschung, der diagnostischen Methoden und der Förderkonzepte* (pp. 209-221). Bochum: Verlag Dr. Dieter Winkler.
- Schneider, E. (2009). Dyslexia and foreign language learning. In G. Reid (Ed.), *The Routledge companion to dyslexia* (pp. 297-310). London: Routledge.
- Scholz, I. (2007). Es ist normal, verschieden zu sein - Unterrichten in heterogenen Klassen. In I. Scholz (Hg.), *Der Spagat zwischen Fördern und Fordern: Unterrichten in heterogenen Klassen* (pp. 7-23). Göttingen: Vandenhoeck & Ruprecht.
- Schwarz, R. L. (1997). *Learning disabilities and foreign language learning*. Retrieved from: <http://www.ldonline.org/article/6065>. Date of last access: 10.08.2022.
- Simon, C. S. (2000). Dyslexia and learning a foreign language: A personal experience. *Annals of Dyslexia*, 50, 155-187. <https://doi.org/10.1007/s11881-000-0021-7>.
- Snowling, M. J. (2000). *Dyslexia*. (2nd ed.). Oxford: Blackwell Publishers.
- Snowling, M. J., Bishop, D. V. M., & Stothard, S. E. (2000). Is preschool language impairment a risk factor for dyslexia in adolescence? *Journal of Child Psychology and Psychiatry*, 41(5), 587-600. <https://doi.org/10.1017/S0021963099005752>.
- Sparks, R. L. (1995). Examining the Linguistic Coding Differences Hypothesis to explain individual differences in foreign language learning. *Annals of Dyslexia*, 45, 187-214. <https://doi.org/10.1007/BF02648218>.
- Sparks, R. L. (2006). Is there a "disability" for learning a foreign language? *Journal of Learning Disabilities*, 39(6), 544-557. <https://doi.org/10.1177/00222194060390060601>.
- Sparks, R. L. (2009). If you don't know where you are going, you'll wind up somewhere else: The case of foreign language learning disability. *Foreign Language Annals*, 42, 7-26. <https://doi.org/10.1111/j.1944-9720.2009.01005.x>.
- Sparks, R. L., Patton, J., Ganschow, L., Humbach, N., & Javorsky, J. (2006). Native language predictors of foreign language proficiency and foreign language aptitude. *Annals of Dyslexia*, 56(1), 129-160. <https://doi.org/10.1007/s11881-006-0006-2>.
- Sparks, R., & Ganschow, L. (1991). Foreign Language Learning Differences: Affective or native language aptitude differences? *The Modern Language Journal*, 75(1), 3-16. <https://doi.org/10.1111/j.1540-4781.1991.tb01076.x>.
- Sparks, R., Ganschow, L., & Pohlman, J. (1989). Linguistic coding deficits in foreign language learners. *Annals of Dyslexia*, 39, 179-195. <https://doi.org/10.1007/BF02656908>.
- Tsakalidou, S. (2020). *Teaching spelling to learners with dyslexia learning German as a second foreign language in primary education*. Unpublished doctoral dissertation. Thessaloniki: Aristotle University of Thessaloniki, Department of German Language and Literature.
- Tsakalidou, S. (2021a). *Teaching German to learners with dyslexia. Ohne Fließ kein Preis*. Athens: Karabatos Hueber Hellas.
- Tsakalidou, S. (2021b). Effectiveness of spelling interventions for learners with dyslexia learning German as a second foreign language. In *ICOMEU 2020. Proceedings of 3rd International Conference on Management of Educational Units (18-20/12/2020). Preparing for new realities in Education: Opportunities and Challenges*. International Hellenic University.
- Tsakalidou, S. (2022). *Heterogeneity in the course of German as a Second Foreign Language in Primary and Secondary Education*. Postdoctoral dissertation. Thessaloniki: Aristotle University of Thessaloniki, Department of German Language and Literature.
- Tsesmeli, S. N., & Seymour, P. H. K. (2006, August). Derivational morphology and spelling in dyslexia. *Reading and Writing*, 19(6), 587-625. <https://doi.org/10.1007/s11145-006-9011-4>.
- Tzouriadou, M. (2010). *Educational material Issue B. Education in Learning Disabilities*. Thessaloniki: Aristotle University of Thessaloniki, Postgraduate Programme Psychopedagogy of Integration: a school for all. Annual 400 hours training seminar "Education of students with mental disabilities and education of students with learning difficulties".
- von Suchodoletz, W. (2007a). Lese-Rechtschreibstörung (LRS) im Sprachenvergleich und im Fremdsprachenunterricht. Dyslexia in Different Languages and the Effect of Dyslexia on Foreign Language Learning. *Sprache-Stimme-Gehör*, 31, 126-131.
- von Suchodoletz, W. (2007b). Welche Behandlung ist bei der Legasthenie wirksam? *Monatsschrift Kinderheilkunde*, 4, 351-356. <https://doi.org/10.1007/s00112-007-1478-9>.

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