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Sensory preferences of dyslectic students and relevant teaching methods (the case of foreign language learning)

Dyslexia in foreign language learning - introduction

Dyslectic students face more challenges in learning a foreign language (or foreign languages) than their non-dyslectic peers. To learn how to effectively communicate in a foreign language, it is necessary to master its subsystems: the phonic (pronunciation, accent, intonation), the graphic (spelling and punctuation), the lexical (vocabulary) and the syntactic (grammatical structure). "To master these subsystems means to develop receptive, productive, interactive and mediatory skills" (Jurek, 2004, p. 98). However, it must be emphasized that "difficulties dyslectic persons face when learning their mother tongue tend to be multiplied in the case of foreign languages pose difficulties to ca. 2/3 of persons with dyslexia, of which 57% complain about the problems with learning vocabulary and grammar, 35% about problems with learning writing, 50% – speaking, and 57% – spelling (Zawadzka-Bartnik, 2010, pp. 220–221).

It has been emphasized both in literature and teaching practice that dyslectic students are in fact capable of mastering specific skills. Researchers (Giermakowska, 2009, pp. 223–231; Łockiewicz, Bogdanowicz, 2013) have pointed out to certain necessary conditions which should support foreign language learning. A key role among them is played by the organisation of the teaching process and teaching methods applied by the teacher.

Applied research methodology

Research objective: to identify sensorial preferences of a dyslectic student, to describe his difficulties in learning a foreign language together with his coping strategies, and to assess the adequacy of his techniques of foreign language learning.

In consequence, the research covers student's sensorial preferences and the resultant learning styles, along with strategies of coping with difficulties encountered in foreign language learning.

Research problems corresponding to the research objectives and objects can be verbalized in the form of the following research problems: what are the difficulties related to foreign language learning faced by the analysed student? How does he cope with those difficulties? What are the analysed student's preferences in foreign language learning? What is his self-assessment of the methods he uses? How do his teachers assess the effectiveness of those learning strategies?

Research methods and techniques applied were: specific case analysis, including an open pre-structured interview with the student and the academic teacher (language teacher), observation (during language lessons), outcome analysis (student's works).

Study subject: a dyslectic second year full-time student (academic year 2014/2015) at the University of Economics in Kraków diagnosed by a psychological and pedagogical counselling centre with dyslexia; teachers working with the student; 3 persons in total.

Difficulties in foreign language learning manifested by the analysed student

The analysed student graduated from a Kraków-based high school (*liceum*), and previously completed junior high school (*gimnazjum*) in one of the Kraków suburban communes. He was diagnosed with dyslexia as early as in primary school. The same learning difficulty was diagnosed in his older brother.

In the first three grades of the primary school, he participated in remedial classes, and was subsequently covered by a review diagnostic procedure, which enabled him to benefit from special examination terms in junior high school and when taking his high school leaving exam (*matura*). Pursuant to the information obtained on his learning achievements, the subject was never at threat of failing a subject, but from a very early stage he faced difficulties with reading and correct writing, and found it hard to learn foreign languages (English, German). He has consistently received better grades from sciences. Physics, mathematics and IT never posed any significant difficulties to him. The selection of the field of study was significantly motivated by his interests, but also the awareness of his own limitations.

Learning difficulties identified by the student included:

a) In early primary education: spelling errors caused by incorrect pronunciation (based on the information provided by the student, his speech impairment involved lisping, characterised by the incorrect pronunciation of lingual alveolar phonemes and their replacement with a number of dental sounds, resulting in incorrect spelling); spelling errors caused by difficulties in differentiating between similar phonemes; slow reading pace; numerous distortions of words; difficulties with understanding the content; reluctance towards tasks involving efficient reading and writing. The examined student has never experienced dysgraphic difficulties – the graphic level of his writing was never questioned by his teachers.

- b) In grades 4–6 of the primary school: the reduction of errors resulting from speech impairment that was eliminated at the end of the second grade, persisting spelling errors which, based on the interview with the student, should be qualified as dyslectic auditory errors, orthographic errors, deteriorating graphic quality of writing (probably as a result of a slow pace of work with a text).
- c) In junior high school and high school: the subject reported no significant difference in comparison to the previous stage, but emphasised the intensifying difficulties in mastering foreign languages (he continued to learn English and started learning German).
- At university: persisting spelling mistakes (occurring in handwriting), d) difficulties with the organisation of learning, the lack of regular learning routine resulting in periods of intensified work during which the subject observed difficulties with understanding texts and problems with memorization, easy fatigue. The student also experienced specific difficulties when working with a text. They were manifested by imprecise understanding of spoken utterances and written texts, difficulties in identifying their main thought, selecting and analysing information, identifying the sender and addressee of a message and classifying the style of an utterance or a text. When making his own utterances or drafting a text, the student experienced difficulties both in speech and in writing. The student was mostly evading spontaneous responses to utterances and active participation in various situations. His linguistic responses were not always comprehensible or appropriate. When processing an utterance, understood as the transfer of a message from speech to writing, he had a clear tendency to persistently apply the rules of a written transfer.

It can be said that all the foregoing difficulties concerning the analysed aspects of learning result from shortcomings in the perceptual-motor development (as confirmed by the information disclosed in the documentation of the psychological and pedagogical counselling centre made available by the student) and decrease his ability to learn a foreign language. Additionally, educational failures decrease his motivation, fuelling fear and reluctance.

Although the student was diagnosed with dyslexia early on, the diagnosis did not contain any detailed information on the dyslexia type or student's preferred learning style. Probably the teachers, who did not have adequate knowledge, used standard teaching methods while working with him, and the individualization of didactic procedures in his case was scarce.

Currently the student is continuing his study of English, and in the second semester commenced a course in Russian. His mean grade, depending on semesters, varies from 3.2 to 4.0. There is a clear difference between better grades he receives from subjects in his field of study and specialty, and grades from foreign language courses. However, it must be emphasized that the student's efforts to learn languages are underpinned by strong and varied motivation. The student recognizes the

[182]

Sensory preferences of dyslectic students and relevant teaching methods... [183]

importance of communicative skills for personal and professional development. His expectations related to the participation in foreign language classes are very high. Usually, they are related to practical (professional) aspects – in his view, language skills boost one's position on the domestic labour market and enable one to search for work and find employment abroad – but also a sense of duty (language courses are obligatory). However, student's own words suggest also the presence of motivation underpinned by fear – most importantly, the fear of marginalization, decreased valuation and self-esteem if his foreign language skills diverge from the expected standard.

This conclusion is illustrated by the selected fragments of his utterances quoted below:

"My difficulties concern predominantly foreign language learning. I have problems with understanding a text I am listening to, I make errors when I write, I have problems learning vocabulary", says the student. He goes on to say that "(...) for this reason I feel uncomfortable when communicating in a foreign language, and so I limit my contacts with foreigners and go abroad reluctantly". And: "I have the impression that I do not know how to learn", "I am focused on ensuring the correctness of spelling, I do not follow the plot", "I have serious problems correcting my own texts, including computer-typed ones", "I have difficulty forming longer texts and utterances, using appropriate terms and expressions", "I speak ungrammatically, I use polonisms".

Language teachers added limitations with mastering the alphabet (pertains to the Cyrillic script), misspelling letters, non-grammatical utterances, typically resulting from the interference with Polish. Other difficulties included slow pace of work with a text based on listening and note-taking, which results in a delay, for instance, in taking notes in the traditional form of linear records.

The table below details information in this area.

No	Difficulty	Occurring previously		Occurs now		Does not
			rarely	often	rarely	occur
I. Reading						
1.	Slow pace of reading	Х		Х		
2.	Reluctance towards reading	Х		Х		
3.	Difficulties in understanding content after single silent reading	х		х		
4.	Difficulties in understanding content after multiple silent readings	х			х	
5.	Difficulties in understanding content when reading aloud	х			x	
6.	Ordering, content selection					
7.	Lack of focus on the text, reading regress, getting lost in a text	х			x	
8.	Mistaking graphically similar words		х		х	

Tab. 1. Learning difficulties declared by the examined student

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	II. Writing					
1.	Orthographic errors	х			х	
2.	Other mistakes – non-orthographic, e.g. misspelled letters, words, word distortions	x		х		
3.	Mistakes when recording digits, numbers		x		х	
4.	Poor legibility of handwriting		x			
5.	Difficulties in drafting written texts	x		х		
6.	No self-correction skills	x		х		
7.	Erroneous form-filling		x	x		
8.	Non-automated handwritten signature		x			х
	III. Attention focus and me	emory				
1.	Easy fatigue	x		х		
2.	Short attention span, short work time	x		х		
3.	Problems with memorizing information	x		х		
4.	Problems with memorising dates, codes, passwords, numeric data	x			x	
	IV. Temporal and spatial orie	entation				
1.	Mistaking dates, hours, places, circumstances	x			х	
2.	Poor time management – constant rush, delays		x		х	
3.	Impaired spatial orientation		x		x	
	V. Spoken utterances/spe	eech				
1.	Difficulties with speaking clearly and providing informa- tion	x		x		
2.	Losing plot, chaotic utterances	х		х		
3.	Difficulties in understanding longer utterances or utte- rances of untypical structure	x		x		
4.	Inappropriate speech rhythm, melody, speed, accent, fluency	x		x		
	VI. Learning technique	es				
1.	Difficulties in organising the learning process		x	х		
2.	The lack of regularity and discipline		x	х		
3.	Inability to plan one's own activities	x		x		
4.	Learning schemes		x	х		
5.	Difficulties in selection of appropriate learning techniques		x	х		
VII. Foreign language learning						
1.	Incorrect alphabet recording	х		х		
2.	Mistakes in naming alphabet letters	х		х		
3.	Difficulties in learning new vocabulary	х		х		
4.	Difficulties with correct spelling	х		х		
5.	Difficulties in learning grammar	х		х		
6.	No ease when speaking	х		х		
7.	No ease in writing		х	х		
8.	Difficulties in understanding reported speech		х	х		
9.	Difficulties in understanding a text being read		х		х	
10	Difficulties in reading aloud		х	х		

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Sensory preferences of dyslectic students and relevant teaching methods... [185]

The analysis of the foregoing information suggests that in many instances the frequency of symptoms identified by the subject intensifies on subsequent educational stages. This pertains in particular to the difficulties with foreign language learning. The situation can be explained by improper learning habits and inadequate learning and teaching methods. Another important factor is the fact that the awareness of failures intensifies the sense of tension in communicative situations, leading to the lack of ease when speaking. Some of the mistakes made by the student (in his own view) are the consequence of stress and are motivated emotionally.

Sensory preferences of the examined student

The subject was unable to identify his learning style precisely. He realised what his preferences were in the course of this research only. A vast majority of his teachers and diagnosticians with whom he has had contacts over the years have also failed to determine his preferred cognitive learning styles, including language learning styles. In the teaching process, teachers applied the same, nondifferentiated, uniform teaching methods and measures to the entire class. Pursuant to the student, also university teachers, including language teachers, do not take account of the specificity of dyslectic difficulties when organizing and planning the class, concluding that at the college level students' problems are their own private matter. This information has been confirmed by language teachers as well.

The analysed student prefers visual style (according to Linksman's classification – Linksman, 2005), which can be described in more detail as the visual-kinaestheticauditory style, with a preference for the right hemisphere (according to J. Dyrda's classification – Dyrda, 2003), The table below summarizes typical features of the learning process based on these preferences and subject's response in various situations.

No.	Category	Information obtained	
1.	Manner of speaking	Taciturn, secretive, sometimes whispers, does not like speaking in the presence of unknown people, reluctant to speak about himself, prefers to listen, and if he does speak out his mind, his contribution is usually valuable and to the point.	
2.	Handwriting	His handwriting is rather neat; although it contains errors, it is mostly legible. However, his pace of work is slow. His notes are neat, others often borrow them; sometimes he adorns his texts with additional graphic elements.	
3.	Eye contact	He maintains eye contact during the conversation, he follows the teacher during a lecture; he is perceptive, notices and pays attention to details, often silently observes his interlocutors.	
4.	Physical contacts	He enjoys being close to other people, but does not like excessive manifestations of tenderness.	

5.	Physical needs and skills	He likes space, is fit, trains volleyball, rides a bike, runs, is capable of significant physical effort, combines intellectual effort with movement.	
6.	Attention	Focuses on one activity, has problems focusing attention on activities and tasks deprived of visual stimuli.	
7.	Memory	Remembers recorded information, highlighted using colour or shape, uses various "memory triggers", e.g. colourful post-its, notices and remembers details, remembers faces, looks, colours, remembers sequences of movements.	
8.	Manner of expressing feelings	Preferably non-verbally, shows joy by movement, is honest, does not hide his feelings, laughs aloud.	
9.	Manner of work (task: to assemble a model)	Observes, tries to match the elements, analyses the scheme, does not read the instruction.	
10.	Problematic behaviours	Sometimes he gets lost in his thoughs, is absent minded, gets of- fended, lacks grit, postpones tasks until the last moment, becomes irritable when someone takes too long explaining something to him, forgets instructions.	
11.	Problematic behaviours of other people	Screaming, verbal assault and aggression, moral preening.	

The VKA preference allows one to learn by observation, repeating activities, note-taking, developing schemes, models, graphic summaries, learn by doing, copying, experiencing, manipulating. In this model, the movement component is very prominent; it involves manipulating objects, being active (fidgeting while seated etc.). A person with the right hemisphere preference starts with organization, to proceed with the consolidation of content, emphasizes connections and dependencies, which facilitates the transfer of information to long-term memory (Plewka, Taraszkiewicz, 2010).

In foreign language learning, matching a written record with the right pronunciation is highly important. Learning may be aided by recording words and texts in various graphic constellations, often reinforced and diversified by the use of illustrations, colours, fonts.

The analysed student learns foreign languages based on textbooks mostly. Textbook structure is communication-oriented, focused on developing speaking skills and correct responses in various situations. Much less attention is paid to the comprehensive teaching of grammar or to translation exercises.

The learning strategy adopted and internalised by the student (understood as a combination of a learning style and organization of individual work) is characterized by the lack of regularity, task-based learning, occasional learning (e.g. before an exam, a test, during the exam session, additional for-grade tasks etc.), is accidental and unorganised. It should be added that this organisation of individual study process is typical for many students, and the analysed subject is not a unique case.

Evaluation of the effectiveness of the methods used in overcoming difficulties – student's and teachers' viewpoints

The analysed student claims that he has never examined the effectiveness of his learning methods or assessed whether they allow him to attain results commensurate with his potential. He asked for some time to carry out such an analysis, but was unable to perform it on his own. Most probably, this situation has its source in the homogeneity of the learning methods reinforced throughout the educational process and the lack of comparison to other methods. He concluded that his knowledge on this subject is intuitive, the selection of learning methods has always been accidental or he copied the methods used at school. It is typical of dyslectic persons to "get attached" to certain learning methods and experience fear of change in this respect.

Language teachers claim that the language teaching repository lacks methods used in work with dyslectic students only. One should conclude that they typically select methods they find valuable and effective, based on multiple reasons. The teaching method selection criteria listed by language teachers include:

- Teaching methods suggested in the textbook and exercise instructions,
- The scope of skills to be learnt,
- Language competence level of the group,
- Teacher's own preferences,
- Time of work the duration of the teaching unit.

They do not include students' cognitive preferences, their limitations, talents or interests. Meanwhile, university-level teaching methodology offers a vast array of effective methods of teaching dyslectic students with specific sensory preferences.

Methods recommended as useful for students with preferences corresponding to the analysed student's model include a number of engaging techniques. The assessment carried out by the student highlights their weaknesses and strengths. The advantages of the methods listed by the student include: stress reduction, creating a friendly, safe atmosphere during the class, maximum student engagement, motivation to active participation, emotional involvement, reinforced memorization, introduction of relaxing elements, self-control and self-correction learning, fostering friendly peer feedback, good work organisation and improved time management. Critical comments concerning the use of engaging methods focus on difficulties with obtaining fast feedback from the teacher as to the correctness of an utterance or a solution. What is more, such methods may introduce the element of competition, distort discipline of group work and cause chaos. They are slightly infantile, unserious, ridiculous.

On the other hand, teachers are rather reluctant to diverge from the specific teaching path suggested by the textbook and the exercises prepared by the textbook authors.



Fig. 1. Teaching methods useful for students with visual preference



Fig. 2. Teaching methods useful for students with kinaesthetic preference



Fig. 3. Teaching methods useful for students with auditory preference

But it is not only the teaching methodology applied in the case of dyslectic students that determines the effectiveness of successful language learning. It is equally important for university as an institution to adopt relevant systemic solutions and ensure positive approach of academic teachers.

The analysed student is not demanding towards teachers or university as an institution. He speaks of his problems with dyslexia taking responsibility for solving them throughout the semester and during the exam session. This is a proof of his maturity, but also the lack of trust in the university. In the interviews, he has said that on previous educational stages he benefited from extensive educational support. In response to the question whether such a support system should be in place at universities as well, he concluded that such a system should be introduced, but its form should be different. He supported this view referring to the need to ensure the continuity of support, he cited experiences and practical solutions adopted in other states or, jokingly, listed famous dyslectic people who made their alma maters proud.

Interviewed language teachers confirmed that the university has no systemic solutions in place that would be targeted at recognizing educational needs of dyslectic students and analyzing possibilities of providing them with support. There is no "unit" that would assist this group in its efforts or support teachers in learning and gaining experience on teaching techniques that could be used with dyslectic students. These issues fall beyond the scope of the duties of the unit for the disabled persons, and no coordinator for dyslectic students exists in the university structure (unlike in the case of certain universities in Europe and the US). The study rules do not guarantee any individualized solutions for dyslectic students that could be applied throughout the semester and during exam sessions; such measures can be applied to a limited extent, depending on case-to-case decisions made by academic teachers.

According to the student, university teachers have little knowledge of what dyslexia is. "For them dyslexia is practically tantamount to low intelligence, or, to put it more bluntly, a dyslectic student is either dumb or lazy" ("Dyslexia, it means that you can't read?").

The modified foreign language learning strategy suggested for the student (the introduction of methods based on the visual and kinaesthetic channels, used as a "prop" for the weak auditory channel, systematic organisation of individual work with workload evenly distributed throughout the semester, ensuring that the student has the option to consult and obtain assistance in developing practice materials) has already brought about its first results. Student's emotional well--being clearly improved, along with his self-esteem. His test results are 10-15 points higher, which means the improvement of a 01.5 grade; in the case of the evaluation of speaking, the student speaks with more ease and with fewer grammatical errors. His vocabulary remains poor, language accent and melody are not always correct.

Conclusions, the discussion of results and practical implications

Pursuant to literature on the subject, the effectiveness of the learning process depends on a number of factors. They include student's potential and their cognitive preferences, as well as teaching methods. The aim of this research was to identify and describe difficulties faced by a dyslectic student (based on the assumption that his case is representative of a broader group with a similar potential, preferences and limitations), and present his coping strategies. What is more, the research included the educational background of the analysed student and foreign language teaching methods used by his teachers. When designing and planning this research, I was fully aware of the lack of knowledge in this field and the modest scope of studies carried out in this area in Poland and abroad. Although there are vast foreign and Polish resources describing the reasons and symptoms of dyslexia in the earliest stages of human development, educational problems faced by adults attract little attention. Meanwhile, lifelong learning has become an indispensible element of our life, and our global reality requires we master several foreign languages.

Dyslectic people have difficulty facing these challenges, while the effect of their work is often incommensurate with their efforts. What is more, it should be emphasized that dyslectic difficulties are permanent and should not be expected to disappear independently. Hence the need to modify and diversify teaching methods (including the methods used by – perhaps predominantly – foreign language teachers).

The research does not justify drawing any far-reaching conclusions. Rather, it identifies the problem and describes its nature. Despite the limited scale of the research, we can conclude that:

• The dyslectic student followed the obligatory educational path typical for general education. Dyslectic difficulties appeared relatively early and were diagnosed at the early stages of primary school. Initial and review diagnostics does not specify the cognitive style of the student or his learning strategies. One should mention the fact that such an examination does not make part of the standard diagnostic procedure performed during psychological-pedagogical examination. The student became aware of his learning style and hemisphere dominance when cooperating with the author of this paper. Among many difficulties that the student faced in primary school, junior, high school and at the university, he emphasized difficulties with foreign language learning – speaking, reading and writing.

One should emphasize the fact that the co-existence of difficulties in reading, writing and speaking poses a different set of difficulties in foreign language learning than observed in the case of the native tongue.

In this respect, research results coincide with those described in the literature (e.g. Bogdanowicz, Smoleń, Zawadzka-Bartnik).

• The examined student prefers the VKA style. Language teachers are unaware of his sensory preferences and do not apply a customized set of language teaching

methods. Although the student has passed his foreign language courses and exams, in his subjective view his language skills are low and insufficient to ensure comfortable communication.

This thesis is partially confirmed by research on learning styles in the context of cognitive requirements of school (e.g. Dyrda), but little space has been dedicated in literature to the analysis of the adjustment of foreign language learning and teaching methods to individual cognitive preferences.

• Of numerous teaching and language teaching methods, rather than focus on a specific group, one should concentrate on the combination based on the polisensory VAK rule (visual, auditory, kinaesthetic). The specificity of language learning (which includes learning vocabulary, lexical-grammatical structures and simultaneous coherent mastering of basic language skills, such as speaking, reading and writing) suggests the need to use both traditional and modern, engaging methods. They include: using textbooks, student books, exercise charts, source texts, dictionaries, translating software, silent reading and reading aloud, paper writing, spelling bees, memorisation techniques, role and scene playing, discussion forms, semantic maps, educational games, computer-aided learning. Another procedure that needs to be emphasized is the process of testing and assessing language competence throughout the semester and in the exam session.

These aspects of research coincide with many studies on teaching (e.g. Okoń, Kupisiewicz, Jankowski, Przyszczypkowski, Skrzypczak), while the selection of the foreign language teaching methods based on the identified cognitive preferences has not been broadly discussed in the literature.

One should conclude that the student's language learning is underpinned by strong and varied motivation. He recognizes the importance of communicative skills both in terms of personal and professional development. His expectations related to the participation in foreign language classes are very high. Usually, they are related to practical (professional) aspects – students are convinced that language skills boost one's position on the domestic labour market and enable one to search for work and find employment abroad – but also a sense of duty (language courses are obligatory). Additionally, fear-fuelled motivation has been identified – the fear of marginalisation, decreased evaluation and lower self-esteem. Such a high level of motivation involves expectations that the teachers will be effective, applying appropriate teaching methods and guiding students in finding optimum techniques for intellectual work.

University education differs significantly from education at lower levels. It is not only voluntary, but characterised by students' high awareness of their own potential, difficulties and priorities. Without doubt, these include language skills. Language skills are not a privilege, but a right. To attain this right, it is necessary to ensure that dyslectic students receive professional and friendly assistance of a language teacher, within the framework of systemic solutions. They comprise: student's self-diagnosis that serves as a starting point for modifying their learning techniques, self-control and self-evaluation, and the measures adopted by university teachers, including the use of poli-modal methods, diversified tools of evaluation and control, and ensuring the possibility of obtaining individual assistance.

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Sensory preferences of dyslectic students and relevant teaching methods (the case of foreign language learning)

Abstract

The study contains a description of the dyslectic student's difficulties occurring in learning foreign languages, that overlap on the symptoms of dyslexia diagnosed in earlier stages of education. As an adult, the student trained a number of foreign language learning strategies and also how to cope with difficulties. The analysis carried out during the research indicates his sensory learning preferences and the used strategies (not always in line with the preferences). This is the basis for proposing changes in the organization of the learning process and student's work.

Key words: dyslexia in foreign languages learning, sensory preferences, teaching methods, multisensory teaching, learning strategy

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[192]