

Teachers' Attitudes toward Teaching Students with Dyslexia

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Abstract

The aim of this paper is to examine teachers' attitudes toward teaching students with dyslexia and to determine whether there are statistically significant differences in their attitudes regarding gender, workplace, initial education, and continual professional development. The study involved 233 elementary school teachers. The Scale of Teachers' Attitudes toward Teaching Students with Dyslexia was used with a three-factor structure: (1) individualized teaching methods; (2) adaptation of teaching materials and evaluation procedures; and (3) support of classroom atmosphere and cooperation. The teachers had positive attitudes toward teaching students with dyslexia in all three dimensions. The class teachers and those trained during their initial and continuing professional development and informal education to teach students with learning difficulties had positive attitudes that were statistically more significant.

In conclusion, the obtained differences in the teachers' attitudes toward teaching students with dyslexia with regard to their professional qualifications during initial and continual professional development indicate the need for systematic teacher education, particularly considering the ways of adapting teaching materials and evaluation procedures so that students with dyslexia would receive education appropriate to their abilities and strengths at all levels of education.

Key words: attitudes; dyslexia; inclusive education; individualized teaching; teachers.

Introduction

In the contemporary society that is driven by technology and media, literacy is much required and important (Pavey, 2007). Well-developed reading and writing skills are the foundation of successful learning and proper functioning in everyday life. Students with

dyslexia adopt these skills with difficulty despite their intellectual abilities and effective schooling. Lenček (2012a), referring to Stanovich (2000), Reid (2003), and Joshi and Aaron (2008), notes that most researchers in the field of dyslexia point out three aspects relevant to evaluation: difficulty, disparity of ability, and diversity.

There are numerous approaches, often with vague terminological definitions and mismatches in describing, evaluating, and understanding dyslexia (Burden, 2008; Wadlington & Wadlington, 2005). Therefore, in an effort to achieve a defining consensus, the *European Dyslexia Association* (Salter, 2007) defines dyslexia as a difference in the adoption and use of reading, spelling, and writing skills, organizational skills, computing abilities, and other cognitive and emotional abilities caused by a combination of difficulties in phonological processing, working memory, rapid naming, sequencing, and automation of basic skills.

Croatia's educational legislative places dyslexia among specific learning difficulties associated with dysgraphia, dyscalculia, dyspraxia, combined and other learning difficulties (*Pravilnik o osnovnoškolskom i srednjoškolskom odgoju i obrazovanju učenika s teškoćama u razvoju / Regulations on Elementary and Secondary Education for Students with Developmental Disabilities*, 2015). Although dyslexia-related disabilities are manifested already in the preschool age, they can become a significant limiting factor in school progression once the child enters elementary education (Serrano & Defior, 2008). These difficulties affect the successful mastering of any subject, learning a foreign language, and understanding mathematical concepts (Schulte-Körne & Remschmidt, 2003).

Frustration and the lack of self-confidence may arise as a secondary consequence of unrecognized dyslexia and/or inadequate approaches to teaching students with dyslexia, with the risk of causing many psycho-emotional problems (Willcutt & Pennington, 2000). Dyslexic students may have a lower level of intrinsic motivation and perception of academic competences (Zisimopoulos & Galanaki, 2009) and a greater incidence of behavioral problems compared to their peers (Dahle & Knivsberg, 2014). On the other hand, early interventions, specific therapeutic programs aimed at teaching the letter-sound correspondence and decoding skills systematically, and the application of these skills in reading and writing activities can have a significant effect on improving literacy skills among students with dyslexia (Galuschka, Ise, Krick, & Schulte-Körne, 2014), which combined with an appropriate school approach can alleviate the student's difficulties and contribute to their proper development.

Inclusive education provides the conditions for maximizing the development of all students' potentials, along with those of students with dyslexia. Pursuant to the Inclusive Education Policy in the Republic of Croatia, students with dyslexia have the right to an appropriate program and form of education to be implemented with the program and professional and pedagogical-didactic adaptations. Program support refers to the application of individualized teaching methods, involving various forms of support, and covering autonomy, work time, work methods, testing skills, knowledge and abilities,

monitoring and evaluation of achievement, student activity, as well as technological, didactic and rehabilitative work, and spatial conditions (*Pravilnik o osnovnoškolskom i srednjoškolskom odgoju i obrazovanju učenika s teškoćama u razvoju / Regulations on Elementary and Secondary Education for Students with Developmental Disabilities*, 2015), without any adaptation of the teaching content. Pedagogical-didactic adaptation implies a variety of specific didactic tools and aids, textbooks, and IT equipment adjusted to students with dyslexia.

Teachers, who are inclusive education providers, and in-school speech and language therapists, who play a key role in preventing, assessing, and treating dyslexia and other specific learning disabilities, provide professional support to students with dyslexia and their parents within a school institution. In contemporary education, teachers have a decisive and a very demanding role in the development of literacy and teaching students with dyslexia, since the early recognition and adequate support increase the probability of student success (Antoniazzi, Snow, & Dickson-Swift, 2010; Carvalhais & da Silva, 2010). Successful teaching of students with dyslexia is based on an individualized approach that includes the teacher's understanding of the student's specificity and needs, especially those related to reading and writing (Dyson & Skidmore, 2002; Rose, 2009). When choosing individualized teaching methods for students with dyslexia, it is necessary to take into account the specifics of each individual child, his/her age, and the subject and content being taught. Some of the methodology adjustments to teaching students with dyslexia highlight the importance of planning the performance framework of a particular teaching unit, providing the students with guidance in an appropriate and clear way, different types of activities, prolonged and effectively allotted time in test situations, feedback in a constructive and positive way (Kraljević & Peretić, 2015), thus directing their attention to the key textual elements, as well as to the linguistic and perceptual adaptation of the written material. Students with dyslexia often rely on their teachers not only to help them understand what they are learning but to make them feel emotionally safe (Thompson & Chinn, 2001).

The teacher's ability to teach students with dyslexia stems from the teacher's knowledge and attitudes (Gwernan-Jones & Budren, 2010). Attitudes often reflect stereotypes about individual groups; they are a reflection of the person who has a certain attitude and they also have an impact on the perception of the individual who is part of the group. In some teachers, the term "dyslexia" can cause negative attitudes, and consequently, lower expectations and a different treatment of the student with dyslexia (Hornstra, Denessen, Bakker, van den Bergh, & Voeten, 2010). In order to be open to appropriate teaching and learning opportunities of students with dyslexia, teachers should have positive attitudes toward dyslexia, since negative attitudes may have a negative impact on the student's success (Elias, 2014). Teachers' attitudes toward teaching students with dyslexia greatly affect the frequency and continuity of providing appropriate support to such students. It has been found that teachers generally have positive attitudes toward dyslexia and the students with dyslexia or other specific learning difficulties, but significantly

less favorable attitudes toward the conditions under which they are taught (Dulčić & Bakota, 2008; Elias, 2014). Teachers are considered insufficiently educated to work with students with dyslexia, while the guidance of a speech and language therapist is rarely available to them (Martan, Skočić Mihić, & Lončarić, 2015a). They also need specific competences or teaching skills to meet the needs of learners with specific learning difficulties (Dockrell & Lindsay, 2001) and require some additional education on teaching students with dyslexia (Washburn, Binks-Cantrell, & Joshi, 2014). Research consistently shows that knowledge gained through initial education and professional development is an important factor in shaping teachers' attitudes toward inclusive education (Avramidis, Bayliss, & Burden, 2000a).

The aim of the current paper is to examine teachers' attitudes toward teaching students with dyslexia and to determine whether there are statistically significant differences in their attitudes regarding their own socio-demographic characteristics (gender, workplace, content represented in initial education, subject matter, and form of education: formal, non-formal and informal).

In line with the research aim, the following hypotheses were set:

- H1. teachers have positive attitudes toward teaching students with dyslexia;
- H2. teachers significantly differ in their attitudes toward teaching students with dyslexia
 - in relation to their own socio-demographic and other independent characteristics:
 - H2.1. female teachers have more positive attitudes toward teaching students with dyslexia;
 - H2.2. class teachers have more positive attitudes toward teaching students with dyslexia;
 - H2.3. Croatian language teachers have more positive attitudes toward teaching students with dyslexia;
 - H2.4. teachers who attended a course during their initial education on teaching students with special needs have more positive attitudes toward teaching students with dyslexia;
 - H2.5. teachers who attended professional training have more positive attitudes toward teaching students with dyslexia;
 - H2.6. teachers who attended informal training have more positive attitudes toward teaching students with dyslexia.

Methodology

Sample

The study was conducted on a convenience sample of 233 female (93.4%, $M=42.84$ years, $SD=9.63$) and male (6.6%, $M=44.40$ years, $SD=12.64$) elementary school teachers from Istria, Karlovac, and the Primorsko-goranska County. There was an almost equal representation of teachers with respect to the field of work (46% class teachers and 53% subject teachers), with an average of 17 years of employment in the profession. The majority of them teach Croatian (17.1%) and English (17.1%). Furthermore, 38%

of the teachers had attended a course on teaching students with special needs during their initial education, with 35% of them citing the course "Special Pedagogy". Almost half of the teachers (43%) had been trained in teaching students with dyslexia, the most common type of non-formal education being through the Education and Teacher Training Agency (77%) and the EU Mobility Agency (33%). In addition, 74% of the teachers had participated in informal training, mostly using professional literature (75%) and the Internet (68%), while 34% of them had received their training through TV programs.

Measuring Instrument

The measuring instrument was created for the current study purpose.

Socio-demographic data on teachers referred to their gender, age, county in which they work, years of work experience, workplace (class or subject teaching), and the subject (in subject teaching).

Independent variables included attending a course on teaching students with special needs during initial education, and non-formal and informal training on teaching students with dyslexia. The variables were dichotomous with the response format "YES" or "NO."

The Scale of Teachers' Attitudes toward Teaching Dyslexic Students contained 20 statements on three sub-scales that examined the attitudes toward individualized teaching (e.g., *The teacher needs to continually highlight the progress in knowledge and skills to a student with dyslexia.*), adaptation of teaching materials and evaluation procedures (e.g., *The teacher should not require from a student with dyslexia to solve all tasks in the same time as other students.*), and support of classroom atmosphere and cooperation (e.g., *It is essential that the teacher creates a stimulating atmosphere in the classroom for students with dyslexia.*).

Statements describing the teachers' attitudes toward the necessary adaptation of teaching materials and evaluation procedures were based on the recommendations from theoretical works (Galić-Jušić, 2004; Ivančić, 2010), while those shaping the factors of classroom atmosphere and cooperation and individualized teaching methods were founded on a review paper (Martan, Skočić Mihić, & Lončarić, 2015b). A five-point Likert-type scale had the following format: 1 - *not at all*, 2 - *to a lesser extent*, 3 *somewhat*, 4 - *to a greater extent*, 5 - *fully*. The factor analysis enabled the exclusion of three factors that accounted for 47% (33% - the first factor, 8% - the second factor, and 6% - the third factor) of the variance regarding the entire space of manifest variables. Factorial communalities and saturations are shown in Table 1.

The first factor consists of six statements, and the highest saturation was obtained in the ones that describe an approach to a student with dyslexia by providing feedback on his or her knowledge and skills, and a planned design of tasks according to his or her abilities. The average saturation was based on acknowledging a students with dyslexia efforts during the grading process, while the lower saturations were founded

on the statements describing the application of a multisensory approach to teaching and individualized teaching dependent on the success achievement ability. This factor comprised the statements describing the individualized teaching of students with dyslexia; hence they were called *individualized teaching procedures*.

Table 1

Factor structure of the Scale of Teachers' Attitudes toward Teaching Dyslexic Students

	h ²	β
1. FACTOR individualized teaching methods		
The teacher needs to continually highlight to a student with dyslexia the progress s/he has achieved in knowledge and skills.	.689	.840
The teacher should carefully plan a task difficulty according to the current possibilities of a student with dyslexia.	.550	.730
When assessing students with dyslexia, the teacher should equally assess the outcomes and efforts the learner has invested in acquiring educational content.	.407	.656
The teacher should provide a student with dyslexia with continuous feedback about his/her strengths and abilities.	.522	.576
The teacher should use a multisensory approach in teaching students with dyslexia (use of visual, auditory, kinesthetic, and tactile sensory modality).	.466	.565
The teacher should base his/her teaching on the opportunities for achieving success in students with dyslexia.	.461	.518
2. FACTOR adaptation of teaching materials and evaluation procedures		
It is a legal right of students with dyslexia to be assigned with a smaller number of tasks in the written exam.	.524	.755
The teacher should not expect from students with dyslexia to solve all tasks in the same amount of time as other students.	.538	.680
The teacher is legally allowed to opt for an oral examination when evaluating and grading a student with dyslexia.	.475	.573
In perceptive and linguistic terms, the teacher adjusts the teaching materials to students with dyslexia.	.419	.413
The adjustments, such as using beige paper, custom fonts, texts divided into paragraphs, and highlighting an important text, contribute to the educational progress of students with dyslexia.	.445	.397
Every student with dyslexia has the legal right to an appropriate program of education (regular program with individualized procedures).	.301	.378
3. FACTOR support of classroom atmosphere and cooperation		
It is essential that the teacher creates a stimulating atmosphere in the classroom for students with dyslexia.	.610	.761
The teacher should not publicly point out reading and writing mistakes made by students with dyslexia.	.456	.668
Dyslexic students achieve poorer educational results when there is no cooperation among school, experts and environment, or no professional assistance of theirs.	.479	.660
It is the teacher's obligation to respect the specific recommendations of speech and language therapists about how to work with students with dyslexia.	.586	.655
The teacher is obliged to familiarize the parents of students with dyslexia with the individualized procedures to be used in the work with their child.	.591	.649

The teacher should create positive classroom atmosphere in which a student with dyslexia has the right to make mistakes without feeling uncomfortable.	.543	.362
It is important for a teacher to establish relationships among the students in the classroom based on tolerance and respect for diversity in learning.	.489	.322
The progress of students with dyslexia depends on the cooperation of teachers and parents.	.308	.313

h^2 - communality; β - factor saturation from the form matrix (only saturations above 0.3 are shown)

The second factor was made up of six statements, and the high saturation was found on the statements regarding the application of adapted materials and conditions in evaluating and grading the achievements of a student with dyslexia. The medium saturation was related to the statement on evaluating the forms of certain statutory regulations, while a very low saturation was found on the statements describing the linguistic and perceptual adaptation of teaching materials. The lowest saturation was recorded on the statement referring to the general legal right of students with dyslexia to have an appropriate program of education. This factor described the teachers' use of adapted teaching materials and methods in teaching and evaluation; it was called *adaptation of teaching materials and evaluation procedures*.

The third factor contains eight statements, and a very high saturation was found on the statements describing the stimulating classroom atmosphere and the importance of cooperation between schools, specialists (especially speech and language therapists), and environment. The medium saturation was found on the statement describing quality classroom atmosphere for students with dyslexia that is motivated by teachers. The promotion of high-quality peer relationships in the students with dyslexia classroom and the influence of the parents-teachers cooperation on the progress of students with dyslexia referred to the statements with a low saturation factor. This factor included the statements describing the creation of positive classroom atmosphere and the importance of cooperation among parents, teachers, and speech/language therapists for the advancement of students with dyslexia; it is called *support of classroom atmosphere and cooperation*.

Based on the factor analysis results, three sub-scales of the questionnaire were obtained: *Scale of Individualized Teaching Methods* ($M=4.50$, $SD=0.50$), *Scale of the Adaptation of Teaching Materials and Evaluation Procedures* ($M=4.36$, $SD=0.58$), and *Scale of the Support of Classroom Atmosphere and Cooperation* ($M=4.58$, $SD=0.43$). The Cronbach alpha reliability coefficient of the internal consistency was 0.81 for the first sub-scale, 0.72 for the second sub-scale, and 0.79 for the third sub-scale. There was a strong correlation between the attitude toward applying individualized teaching methods and support procedures ($r=0.620$, $p<0.001$) and adapted teaching materials and evaluation methods ($r=0.508$, $p<0.001$).

Procedure

The study was conducted during the summer semester of the school year 2015/16, and the data were collected by distributing paper-and-pencil questionnaires across 23 elementary schools. The teachers participated voluntarily and were informed about

the purpose and the aim of the study, as well as about the method of filling out the questionnaire. The provisions of the Code of Ethics, including data anonymity, were followed. A total of 233 of the submitted questionnaires were collected, which amounted to 43%.

Data Processing Method

Descriptive statistics was used to describe the basic statistical indicators on variables. Factor analysis with factor extraction, principal component method, and stochastic rotation of factor axes were performed to determine the latent space of the given scale. In determining significant factors, Cattell's *scree plot* was used. The scale reliability was tested with the Cronbach alpha analysis of the internal consistency reliability type, while the normality of distribution was tested with the Kolmogorov-Smirnov test. The correlation among the factors was calculated with the Spearman's correlation coefficient. The Mann-Whitney U test was performed in order to determine the differences between the groups of teachers in the attitudes toward teaching students with dyslexia in relation to independent features.

Results

Table 2 shows basic descriptive data on the teachers' attitudes toward teaching students with dyslexia. Compared to all the observed items, the greatest dispersion of responses suggests that they differ mostly in the opinion that it is a legal right of students with dyslexia to be assigned with a smaller number of tasks in the written exam. The lowest average result was obtained on this particular statement.

Table 2
Descriptive data on teachers' attitudes toward teaching students with dyslexia

Teachers' attitudes toward teaching students with dyslexia	N	Min	Max	M	SD
Individualized teaching procedures	221	3	5	4.50	.497
The teacher should provide a student with dyslexia with continuous feedback about his/her strengths and abilities.	226	1	5	4.70	.609
The teacher needs to continually highlight to a student with dyslexia the progress s/he has achieved in knowledge and skills.	223	2	5	4.62	.602
The teacher should carefully plan a task difficulty according to the current possibilities of a student with dyslexia.	223	2	5	4.47	.702
When assessing students with dyslexia, the teacher should equally assess the outcomes and efforts the learner has invested in acquiring educational content.	225	1	5	4.45	.725
The teacher should base his/her teaching on the opportunities for achieving success in students with dyslexia.	223	2	5	4.38	.699
The teacher should use a multisensory approach in teaching students with dyslexia (use of visual, auditory, kinesthetic, and tactile sensory modality).	226	1	5	4.36	.817

Adaptation of teaching materials and evaluation procedures	218	2	5	4.36	.582
The adjustments, such as using beige paper, custom fonts, texts divided into paragraphs, and highlighting an important text, contribute to the educational progress of students with dyslexia.	223	1	5	4.52	.703
Every student with dyslexia has the legal right to an appropriate program of education (regular program with individualized procedures).	224	1	5	4.51	.858
In perceptive and linguistic terms, the teacher adjusts the teaching materials to students with dyslexia.	225	1	5	4.46	.773
The teacher is legally allowed to opt for an oral examination when evaluating and grading a student with dyslexia.	224	1	5	4.46	.808
The teacher should not expect from students with dyslexia to solve all tasks in the same amount of time as other students.	226	1	5	4.44	.869
It is a legal right of students with dyslexia to be assigned with a smaller number of tasks in the written exam.	221	1	5	3.77	1.245
Support of classroom atmosphere and cooperation	224	3	5	4.58	.426
It is important for a teacher to establish relationships among the students in the classroom based on tolerance and respect for diversity in learning.	226	3	5	4.85	.405
The teacher should create a positive classroom atmosphere in which a student with dyslexia has the right to make mistakes without feeling uncomfortable.	226	2	5	4.81	.469
It is the teacher's obligation to respect the specific recommendations of speech and language therapists about how to work with students with dyslexia.	226	1	5	4.71	.561
It is essential that the teacher creates a stimulating atmosphere in the classroom for students with dyslexia.	226	1	5	4.70	.602
The teacher is obliged to familiarize the parents of students with dyslexia with the individualized procedures to be used in the work with their child.	226	1	5	4.56	.717
The teacher should not publicly point out reading and writing mistakes made by students with dyslexia.	226	1	5	4.40	.905
The progress of students with dyslexia depends on the cooperation of teachers and parents.	225	1	5	4.35	.741
Dyslexic students achieve poorer educational results when there is no cooperation among school, experts and environment, or no professional assistance of theirs.	225	1	5	4.33	.824

N – number of respondents; M – arithmetic mean; Min – minimum value; Max – maximum value; SD – standard deviation

It can be observed that the teachers in the dimension *individualized teaching procedures* fully agreed with the statements according to which teachers should provide the student with dyslexia with continuous feedback about his/her strengths and abilities, and highlight the progress (s)he has achieved in knowledge and skills. To a greater

extent, they agreed that it is necessary to carefully plan a task difficulty according to the current possibilities of the student with dyslexia, and to equally assess the outcomes and efforts that the learner has invested in acquiring the educational content, that teaching students with dyslexia should be based on the possibilities for achieving success, and that a multisensory approach should be used in teaching.

In the dimension *adaptation of teaching materials and evaluation procedures*, the teachers fully agreed that the adaptations, such as using beige paper, customized fonts, texts divided into paragraphs, and highlighting the important text, contribute to the educational progress of students with dyslexia, and that every student with dyslexia has the legal right to an appropriate program of education (regular program with individualized procedures). They considered to a greater extent that in perceptive and linguistic terms, the teacher adjusts the teaching materials to students with dyslexia, that it is legally allowed to opt for an oral examination when evaluating and grading a student with dyslexia, and assign the student a smaller number of tasks in the written exam as well as that it should not be expected from students with dyslexia to solve all tasks in the same amount of time as other students.

With regard to the dimension of *support of classroom atmosphere and cooperation*, the teachers fully agreed that it is important to establish relationships among classroom students to be based on tolerance and respect for a diversity, which should consequently create positive classroom atmosphere in which a student with dyslexia has the right to make a mistake without feeling uncomfortable, that it is their obligation to respect the specific recommendations of the speech/language therapist, that it is essential to create the stimulating classroom atmosphere for students with dyslexia, and that they are obliged to familiarize the parents of students with dyslexia with the individualized procedures to be used when working with their child. The teachers agreed to a greater extent that they should not publicly point out mistakes in students with dyslexia's reading and writing, that students with dyslexia progress depends on the cooperation between teachers and parents, and that students with dyslexia achieve poorer educational results when there is no cooperation and expert assistance of school, professionals, and environment.

The normality of distribution was researched with the Kolmogorov-Smirnov test, indicating that the distribution statistically significantly deviates from the normal distribution in each obtained sub-scale ($z_1=2.86$; $p<0.001$; $z_2=2.53$; $p<0.0001$; $z_3=2.79$; $p<0.001$). Therefore, Mann-Whitney's U test was used, and the results on the given scale factors are shown in Table 3.

As can be seen in Table 3, statistically significant differences were found on the factors of the *Scale of Teachers' Attitudes toward Teaching Dyslexic Students* in all the independent variables. Statistically significant differences were obtained in the teachers' attitudes toward *individualized teaching methods* for students with dyslexia, *adaptation of teaching materials and evaluation procedures*, and *support of classroom atmosphere and cooperation* in relation to *gender, workplace, and informal teacher training*. Female, class and those teachers who had attended informal training had more positive attitudes toward teaching

students with dyslexia when compared to male, subject and those teachers who had received no informal training. Also, statistically significant differences in attitudes toward *individualized teaching procedures* and *support of classroom atmosphere and cooperation* existed among the teachers regarding the availability of a course on teaching students with special needs during their initial education and professional training. The teachers who declared that they had attended a course on teaching students with special needs and those who had been professionally trained to work with students with dyslexia had more positive attitudes toward *individualized teaching* and *support of classroom atmosphere and cooperation*. The Croatian language teachers had more positive attitudes toward *individualized teaching procedures* and *adaptation of teaching materials and evaluation procedures* than the teachers who teach other subjects. However, the obtained differences related to the teachers' gender and subject should be carefully considered because of the extremely disproportionate number of respondents in the groups.

Table 3

Differences between groups on the Scale of Teachers' Attitudes toward Teaching Dyslexic Students in relation to independent variables

		F1		F2		F3	
		N	M _{rang}	N	M _{rang}	N	M _{rang}
Gender	M	15	58.97	15	52.70	15	62.73
	F	203	113.23	199	111.63	205	114.00
		764.50***		670.50***		821.00**	
Workplace	ST	119	102.33	117	96.50	120	101.93
	CT	101	120.12	100	123.62	103	123.73
		5037.50*		4388.00***		4971.50*	
Subject	CRO	19	74.89	19	69.18	19	65.13
	OC	91	51.45	88	50.72	92	54.11
		496.00**		547.50*		700.50	
University course	NO	133	98.78	129	104.84	134	102.50
	YES	81	121.82	82	107.82	83	119.49
		4226.50**		5140.00		4690.50*	
Professional training	NO	117	94.75	115	95.48	119	97.00
	YES	89	115.01	88	110.52	90	115.57
		4182.50*		4310,50		4403.50*	
Informal education	NO	52	86.12	50	80.53	54	86.19
	YES	151	107.47	149	106.53	151	109.02
		3100.00*		2751.500**		3169.50*	

Mann-Whitney U test; * = P<0.05; **=p<0.01; ***=p<0.001; Factor 1 - individualized teaching procedures; Factor 2 - adaptation of teaching materials and evaluation procedures; Factor 3 - support for classroom atmosphere and cooperation; N - number of teachers; M_{rang} - measure of central tendency for group; CT – class teaching; ST – subject teaching; CRO - Croatian language; OC - other courses.

Discussion

As it was expected, the class and subject teachers equally demonstrated positive attitudes toward *individualized teaching* of students with dyslexia, as well as the need for an *adaptation of teaching materials and evaluation methods*, and the creation of *positive classroom atmosphere*. The current term *classroom atmosphere* was first based on the theoretical view, which means the relationship between the teacher and students, as well as the interrelationships among students, i.e. through the interaction and relational aspects of the relationship between students and their relationship with the teacher. In this regard, the teachers consider that creating positive classroom atmosphere provides support to students with dyslexia, which also includes the cooperation with speech and language therapists and parents. Positive classroom environments are dominated by the relationships based on respect, appreciation, mutual understanding, and assistance, and also reflected in respectful communication. The perception of classroom atmosphere depends on the student's individual characteristics, hence on the way in which he or she experiences classroom relationships, whether he or she feels comfortable, and whether he or she finds it stimulating for active participation in the teaching process. Therefore, the classroom atmosphere can be perceived as an incentive factor for active and constructive participation, or, conversely, as an unsuitable environment that contributes to passivity, seclusion, and suppression of personal individual characteristics. Casserly (2013), thus, states that every student should feel worthy and free to talk in front of teachers and peers. There is a well-known correlation between academic and socio-emotional student progress, that is, educational achievements are in correlation with the student's socio-emotional state, and both are under a significant influence of the classroom atmosphere. The absence of positive and stimulating relationships, as well as positive learning atmosphere, is described as unstimulating classroom atmosphere dominated by negative and endangering forms of communication. In such environments, students might feel isolated and unaccepted, which negatively affects their socio-emotional development. For this reason (Ivančić, 2010; Humphrey, 2003; Wadlington, Jacob, & Bailey, 1996), it is important that the teacher develops a relationship of acceptance and understanding of the students with dyslexia thoughts, feelings, and behaviors, that he or she praises the student's strengths and includes the student in all classroom activities.

In conceptual terms, the classroom atmosphere describes positive relationships among peers primarily shaped by the teacher's relationship with students and the teacher's ability to encourage the development of respectable peer relationships. Considering the developmental characteristics of lower elementary school students and their spontaneous reaction to diversity, the role of teachers becomes extremely significant. For example, peer reactions to different forms of individualized approaches, such as the use of adapted teaching materials and tasks, oral instead of written examinations, prolonged examination time, etc., may leave the impression of "a favoring" student to whom such adjustments apply, as well as lead to a sense of unequal status in relation to

other students. Without good teacher feedback on peer observation and interpretation, dyslexic and other students with developmental difficulties can be mocked or isolated by their peers. Therefore, the teacher's task is to inform his or her peers about the individual differences and learning styles of each student in the classroom and, thus, develop the tolerance and appreciation for differences in individual learning styles. For example, feedback on the students with dyslexia specific errors in reading and writing should not be made in public (Ivančić, 2010). This prevents a student with dyslexia from being exposed to an unpleasant experience and demonstrates understanding since these difficulties are immanent to dyslexia. Respecting individual characteristics, the teacher directs his or her teaching toward each student's strengths. He or she, thus, creates positive classroom atmosphere in which students with dyslexia are viewed in the context of their possibilities and individual differences, not their specific difficulties.

Apart from the classroom atmosphere, the teachers find a collaboration with speech and language therapists and parents as an important element in the progress of students with dyslexia. The quality and continuous cooperation between teachers, parents, and speech/language therapists is an integral part of the therapeutic and educational work with students with dyslexia (Posokhova, 2000). Experiences from practice undeniably emphasize the key role of parents in providing support to students with dyslexia, which is an important predictor of their school success and socio-emotional development.

In order to understand the attitudes of teachers toward individualized procedures of teaching students with dyslexia, it is important to emphasize that they are conceptually related to the kind of teaching that targets the individual characteristics of such students. So, good teaching, which is based on the strengths and opportunities of dyslexic students, is an important part of improving their basic academic skills, self-confidence, and confidence in their educational abilities (Humphrey & Mullins, 2002; Ridsdale, 2004; Singer, 2008). If teaching is predominantly oriented toward improving reading and writing skills, which is the area where students with dyslexia experience failures, they will often encounter the situations of failure and difficulty, while success stories that positively affect the development of self-confidence will remain lacking. In order for students with dyslexia to succeed in their learning and academic progress, teachers should recognize their abilities and creativity (Reid, 2011). The same author states that it should be borne in mind that there is a danger that the abilities and creativity of students with dyslexia remain neglected due to their preoccupation with the improvement of literacy skills. It is well known that the experience of success is a predictor of the amount of effort being invested by the student, so an important aspect of teaching students with dyslexia highlights the importance of investing effort. Teachers should emphasize to students with dyslexia that progress is connected to effort. Casserly (2013) states that students with dyslexia who are experiencing success will be more active and willing to invest efforts to meet school requirements. Furthermore, when it comes to an individualized approach, it refers to the teaching and evaluation methods in line with the student's abilities, opportunities, and interests. In the work with students with dyslexia,

this involves providing timely feedback, planning the requirements appropriate to the student's abilities, and evaluating the academic achievement in accordance with his or her individual characteristics. Thus, Reid and Green (2007) claim that discussing a topic prior to completing an assignment, along with repeating and revising the instruction, points to the student's current knowledge and previous knowledge s/he needs to understand and successfully complete the assignment. The criteria for evaluating and grading students with dyslexia should be clear to parents and students. Specific writing errors do not need to be highlighted in red, while errors caused by specific problems should not be taken into consideration. Evaluation should not cause negative emotions even though the teacher is obliged to adequately guide the students to the mistakes they have made in reading or writing (Goldup & Ostler, 2000). Also, during the evaluation, it is necessary to point out the progress that the student with dyslexia has achieved in knowledge and skills (Martan, Skočić Mihić, & Lončarić, 2015b).

Furthermore, evaluation and teaching should be done in accordance with the individual learning style, which is determined in relation to the dominant input channel of reception and the way of information processing, the preferred way of thinking, information processing, and understanding. The visual, auditory, and kinesthetic types of learning, thus, dominantly differ (Willis & Kindle Hodson, 2004). Therefore, in teaching, it is desirable that a teacher knows how to recognize and define a student's preferred learning style and to use a multisensory approach that allows the use of at least one learning channel that corresponds to the student's dominant style of learning. The multisensory approach is based on the interaction of visual, auditory, kinesthetic, and tactile elements of teaching, which can simultaneously increase memory and learning (Galić-Jušić, 2004).

A successful individualization of the process of teaching students with dyslexia also requires the adaptation of teaching materials and evaluation procedures toward which teachers express positive attitudes. *Regulations on Elementary and Secondary Education for Students with Developmental Disabilities (Pravilnik o osnovnoškolskom i srednjoškolskom odgoju i obrazovanju učenika s teškoćama u razvoju, 2015)* determines the right of students with dyslexia to an appropriate program of education including didactic-methodological adaptations, such as inserting linguistic and perceptual changes in the written material, opting for oral examination, setting a smaller number of tasks in the written exam, and providing extended time. A linguistic adaptation refers to the semantic and syntactic changes through the use of shortened, syntactically and semantically simplified sentences (Anić Kuhar et al., 2007). Linguistically adapted texts are considered to be easy reading materials and contain adjustments at the level of sentence constructions, word choice and order, and word explanations. All of these aspects should be designed to make reading and understanding easier. It is important that information in the given text is understandable to the student, and that it can be processed, memorized and used in learning. Furthermore, some forms of perceptual adaptation include: increased spacing between rows, texts divided into smaller sections

with highlighted subtitles, text alignment to the left for easier line tracking, use of beige paper and “plain letters” (Lenček, 2012b), supporting texts with visual materials (Reid, 2006), etc. Research has shown that an increased font size, along with greater spacing between letters, words, and rows, significantly contributes to the quality of reading in dyslexic persons (Zorzi et al., 2012). Besides, some of the fonts that make it easy for people with dyslexia to read cover *Arial*, *Verdana*, *Helvetica*, and *Courier* (Rello & Baeza-Yates, 2013), in addition to *Dyslexie*, because of the increased spacing between letters (Marinus, Mostard, Segers, Schubert, Madelaine, & Wheldall, 2016).

For a better understanding of the impact of teachers’ personal and professional characteristics on their attitudes toward teaching students with dyslexia, it is useful to differentiate the influences of their gender, study programs, and workplace. Testing the significance of differences shows that female teachers have more positive attitudes toward individualization in teaching students with dyslexia than male teachers. Considering that only 15 male teachers participated in the study, compared to 203 female teachers, these findings should be taken with caution. Similarly, Gwernan-Jones and Budren (2010) have found that female students, future teachers, have more positive attitudes toward teaching students with dyslexia and, in general, toward inclusive education of special needs students (Avramidis, Bayliss, & Burden, 2000b) even though the authors warn us that the gender variable is generally not a strong predictor of teacher attitudes toward inclusive education (Avramidis et al., 2000a).

The expected findings also indicate that class teachers have more positive attitudes toward individualization of students with dyslexia. They, unlike subject teachers, expressed to a greater extent their appreciation for the importance of applying individualized procedures in teaching students with dyslexia, adapting teaching materials and evaluation procedures, also providing classroom support and collaboration. The obtained results were expected given that class teachers attend a course on teaching students with dyslexia during their initial education, unlike subject teachers. The influence of attending a study course is linked to teachers’ more positive attitudes toward teaching students with developmental difficulties. Although class teachers attend only one compulsory course, whose content covers teaching students with special educational needs, during their initial five-year education, its availability affects self-evaluated competences for teaching this group of students (Skočić Mihić et al., 2014).

As the specific difficulties in reading and writing are closely related to language skills, in this paper we developed the hypothesis according to which the attitudes of Croatian language teachers would be more positive. In accordance with the established hypothesis, these expressed their agreement with the importance of applying individualized procedures in teaching students with dyslexia, adapting teaching materials and evaluation procedures, to a significantly greater extent than other teachers. Of course, these findings should be cautiously considered and verified in other studies as this is due to the non-harmonized distribution of respondents by groups, with the involvement of only 19 Croatian language teachers. A possible interpretation of this finding is related to

the activities arising from the Croatian language curriculum. Namely, when compared to other subjects, the outcomes here are much more focused on the well-developed literacy and linguistic and speech competences. Since these are areas of difficulty for students with dyslexia, they are largely expressed in implementing the content of this particular subject. Croatian language teachers, thus, have to apply these adjustments more commonly in everyday work with students with dyslexia and are more likely to be aware of their benefits.

It is interesting to note that the research on inclusive practice in Croatia consistently proves a lack of qualifications and the importance of teachers' initial or continuing professional development of the competence for inclusive teaching (Beaudoin, Lončarić, & Skočić Mihić, 2014; Skočić Mihić 2017; Beaudoin, Skočić Mihić, & Lončarić, 2016; Bouillet, 2010; Kudek Mirošević, 2016; Kudek Mirošević & Jurčević Lozančić, 2014; Martan, Skočić Mihić, & Puljar, 2016; Skočić Mihić, Gabrić, & Bošković, 2016; Skočić Mihić, & Sekušak-Galešev, 2017; Skočić Mihić, Beaudoin, & Krsnik, 2016; Skočić Mihić, Lončarić, & Pinoza Kukurin, 2009). In accordance with earlier findings, teachers differ in their attitudes toward individualization in teaching students with dyslexia when compared to the competences they have acquired in initial and continuing professional development and informal education. Teachers' preparation and formal education play an important role in developing their positive attitudes toward inclusive education (Hsien, 2007) and it can also have a significant impact on shaping attitudes toward students with dyslexia. Experts warn us that there are significant disadvantages in the teacher's initial education on dyslexia (Carvalhais & da Silva, 2010). The teachers who stated that they had attended a course on special needs during initial education had more positive attitudes toward individualized teaching and support of classroom atmosphere and cooperation. Equally positive attitudes were also found in the teachers who had been trained to work with students with dyslexia. Taking into account that differences in the teachers' attitudes toward the adaptation of teaching materials and evaluation procedures were not obtained, the question arises whether the competences to support students with dyslexia were acquired during initial and continual professional development. In this regard, it would be necessary to determine whether the study programs and training programs for teachers provide the acquisition of competences for specific aspects of curriculum adaptation and evaluation procedures for this group of students. Consequently, Erdeljac and Franc (2012) point to the problem of unsystematic and insufficient education on dyslexia and methods of working with students with dyslexia and that, due to the complex issue of dyslexia, a change in teaching curricula is much needed. Thus, Elias (2014) highlights that failures in inadequate teaching can have lasting consequences on an individual's life. In fact, professional development should focus on developing and improving self-efficacy of teachers so that they could provide students with dyslexia with effective education. Researchers unequivocally emphasize the need for better student education and better professional teacher development (Bell, McPhillips, & Doveston, 2011; Moreau, 2014; Soriano-Ferrer, Echegaray-Bengo, & Joshi 2016; Washburn, Joshi, & Binks Cantrell, 2010; Washburn et al., 2013).

Apart from the formal modes of education, competences for teaching students with dyslexia can be acquired through an independent study of professional literature, internet sources, and the like. In the current study, this has proven to be significant in shaping the teachers' attitudes toward teaching students with dyslexia in all the three dimensions. Teachers who have lacking and/or insufficient access to training courses are probably more motivated in seeking ways to help students with dyslexia.

Conclusion

In inclusive classrooms, the evaluation of teachers' attitudes toward teaching students with dyslexia is very important. Possible negative attitudes toward dyslexia consequently bear the risk of unequal and inappropriate treatment of students with dyslexia (Hornstra et al., 2010). The results of this study confirm the hypothesis that the teachers have positive attitudes toward individualized teaching, adaptation of teaching materials, and evaluation procedures adapted to the specific needs of students with dyslexia, also toward support of positive classroom atmosphere and cooperation with parents and speech/language therapists. Thereby, the class teachers and teachers who received informal training have statistically significantly more positive attitudes on all the three sub-scales. Positive attitudes toward teaching these students are also present among the Croatian language teachers, who attended a course on teaching students with special needs during their initial education, and the teachers who received training in working with students with dyslexia. Given the self-evaluation of teachers, the obtained results should be taken with caution. It is possible that the teachers were inclined to provide socially desirable answers.

Despite the aforementioned, positive attitudes toward teaching students with dyslexia are more present in those teachers who acquired competences to work with such students through various forms of education, no matter whether this refers to the availability of a course in which they were taught about this topic, forms of professional development, or independent learning. Therefore, a more systematic education of teachers is needed, in particular on the ways of adapting teaching materials and evaluation procedures so that students with dyslexia can receive adequate support at all levels of education and, to a great extent, realize their potentials. For a better preparation of teachers, all teaching programs should include lessons on dyslexia and approaches to working with students with dyslexia and those having other specific difficulties in learning.

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Učiteljski stavovi o poučavanju učenika s disleksijom

Sažetak

Cilj je ovoga rada istražiti stavove učitelja o poučavanju učenika s disleksijom te utvrditi postoje li statistički značajne razlike u stavovima s obzirom na spol, radno mjesto, inicijalno obrazovanje i trajni profesionalni razvoj. U istraživanju su sudjelovala 233 osnovnoškolska učitelja. Koristila se Skala stavova učitelja prema poučavanju učenika s disleksijom trofaktorske strukture: (1) individualizirani postupci poučavanja; (2) prilagodba nastavnih materijala i postupaka vrednovanja i (3) podrška razrednim ozračjem i suradnjom. Učitelji imaju pozitivne stavove prema poučavanju učenika s disleksijom u svim trima dimenzijama. Pritom statistički značajno pozitivnije stavove imaju učitelji razredne nastave i oni koji su se usavršavali za rad s učenicima s teškoćama tijekom inicijalnoga i trajnoga profesionalnog razvoja, kao i samostalnim učenjem.

Zaključno, dobivene razlike u stavovima učitelja prema poučavanju učenika s disleksijom s obzirom na njihovu stručnu osposobljenost tijekom inicijalnoga i trajnoga profesionalnog razvoja ukazuju na nužnost sustavnije edukacije učitelja, osobito o načinima prilagodbe nastavnih materijala i postupaka vrednovanja, kako bi na svim razinama obrazovanja učenici s disleksijom dobili obrazovanje primjereno svojim sposobnostima i jakim stranama.

Ključne riječi: *disleksija; individualizirano poučavanje; inkluzivno obrazovanje; stavovi; učitelji.*