IMPACT OF TEACHERS' BACKGROUND ON THEIR PERCEPTIONS OF FACTORS INFLUENCING THE EFFECTIVENESS OF LESSONS

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Abstract: Measuring the effectiveness of lessons is a complex activity and is often based on the perceptions of teachers, which can also be influenced by the characteristics of individual teachers. The goal of this research study was to compare the attitudes of teachers, who are part of an adapted educational programme with a lower educational standard, on the importance of various factors related to the effectiveness of lessons. The factors evaluated include their basic education, years of work experience, and the assessment of their own competence for working with students with special needs. The research sample consisted of 112 teachers who were part of the above-mentioned educational programme. The Kolmogorov-Smirnov test was used to assess the normality of the data and the Kruskal-Wallis test was used to compare the teachers' views on the importance of the influence of a single factor on the effectiveness of lessons (i.e.,) the characteristics of the teachers' background. The results show that, based on the basic education of the teachers, there are differences in the teaching materials and the teaching and didactic aids used during lessons. Special and rehabilitation pedagogues attribute a greater influence of these variables on the effectiveness of lessons compared to teachers with the different educational background. Differences were also observed in the lesson planning variable: teachers with higher number of years of work experience believe that lesson planning has a significant influence on the effectiveness of lessons. Furthermore, the results indicate that differences in terms of self-assessed competence in working with students with special needs are associated with the motivation variable: teachers who reported high competence for working with students with special needs attributed this variable as having the greatest influence on the effectiveness of lessons. Based on these findings, we attempted to explain the potential reasons for the differences observed in the perceptions of teachers regarding the influence of individual variables on the effectiveness of lessons and how these variables may change based on the background of the teachers involved in the present research study.

Keywords: children with special needs, effectiveness of lessons, effective lesson implementation, teachers' background information

INTRODUCTION

The concept of effectiveness of lessons affects various areas of education, with the main question being which factors have the greatest influence on students' achievements. To understand the factors that can influence the effectiveness of lessons, we need to look beyond the lessons themselves. The academic success of students is affected by many factors that intertwine and influence each other. Over the years, research on effectiveness of lessons has tried to explain the effects of education on students' learning success, as well as understand the complex relationships between factors that influence effectiveness of lessons. Research

has shown that the influence of different factors on the effectiveness of lessons and, consequently, on a student's performance, are multi-level and complex. Understanding the effectiveness of lessons, therefore, requires a careful analysis of these factors and their interplay.

Several studies (e.g., Marzano, 2003; Hattie, 2009; Slavin, 1996; Creemers and Kyriakides, 2007) have associated the effectiveness of lessons with various factors that have an impact on an individual student's ability to achieve optimal results. High or optimal academic achievements are also known as academic performance, which is defined by the standards of knowledge for a cer-

tain educational programme, class, and students' age (Puklek Levpušček and Zupančič, 2009). In research related to effectiveness of lessons, academic achievements are therefore equated to those that indicate the level of achievement of effectiveness of lessons. Nevertheless, measuring the effectiveness of lessons is very challenging, since it is influenced by many complex interwoven factors that also depend on the specific context of the individual school. Bandura (1977) noted that, when measuring the effectiveness of a lesson, in addition to the student's learning achievements as an indicator of the effectiveness of the lesson, we can also use the teacher's own perception of the effectiveness of the implementation of an individual lesson. Teachers perceived self-efficacy refers to their perception of their own abilities to teach and perform other tasks related to their profession (Friedman and Kass, 2002). Regarding the effectiveness of teaching, it is necessary to distinguish between the terms 'effectiveness' and 'quality of teaching', which are often used incorrectly. The effectiveness of lessons is mainly associated with the learning achievements of students (Marzano, 2003; Hattie, 2009; Creemers and Kyriakides, 2007), while the quality of lessons refers mainly to teaching styles and methods (explanation methods, the way students are involved in lessons, teachers' feedback to students, and so on) that the teacher uses during the teaching process (Kyriakides et al., 2009). However, both the effectiveness and the quality of the lessons affect the learning achievements of students.

The effectiveness of lessons is linked to several factors, which are classified into different groups and have different impacts on the academic success of an individual student. Many authors have dealt with the factors that influence the effectiveness of lessons, and there are both differences and similarities between them. In his research on the effectiveness of lessons, Marzano (2003) focused primarily on empirical studies conducted by various researchers and his own experience in education, and combined the factors of effective teaching into three groups (teacher-level factors, student-level factors, and school-level factors), including factors that the school and teachers

can influence. Creemers and Kyriakides (2007) followed a similar approach to Marzano (2003) by categorising the factors of effective instruction into the same groups as Marzano (2003), but they introduced an additional group of factors at the system level. Each factor that they included in each group should have a positive impact on the academic achievements of the students. Unlike the above-mentioned authors, Hattie (2009) conducted over 800 meta-analyses of various studies in the field of effectiveness of lessons and classified the factors of effectiveness of lessons into six groups (curriculum, school environment, home environment, student, teacher, and teaching approach). Over several years of research, he identified 138 factors (Hattie, 2009), 150 factors (Hattie, 2012), and finally, as many as 190 factors (Hattie, 2015) that can influence the effectiveness of lessons to varying degrees. Previous research on the effectiveness of lessons differ mainly in the number and type of factors identified that influence the effectiveness of lessons, the number of groups of factors that influence the effectiveness of lessons factors, and the groups used to classify an individual factor. Nevertheless, most instructional effectiveness researchers (e.g., Marzano, 2003; Hattie, 2009; Creemers & Kyriakides, 2009; Marentič Požarnik, 2019) agree that the effectiveness of lessons is ultimately influenced by a combination of factors, rather than a single factor. Researchers (e.g., Hattie 2009; Creemers & Kyriakides, 2009; Alshumaimeri, 2023) also agree that the context of the individual school is very important when studying the effectiveness of lessons, which is reflected by the distinct influence of individual factors in a specific school context. When it comes to the influence of individual factors on the effectiveness of lessons, the influence of the specificity of the context of an individual educational programme or individual school is strongly emphasised, where the characteristics of the teachers' backgrounds are also included, since they can cause differences in the perception of the importance of the influence of an individual factor on the effectiveness of lessons.

As previously mentioned, the specific context of the individual school also represents the educa-

tion of people with special needs, more precisely an adapted educational programme with a lower educational standard. In Slovenia, the Commission for Guidance of Children with Special Needs directs students who are unable to follow the basic education programme of elementary schools to the adapted educational programme. These programmes generally include children with a mild intellectual disability and those with autistic disorders. However, students who are included in this educational programme often have other associated disorders that affect their functioning (Regulations on the Organisation and Method of Work of Committees for Guidance of Children with Special Needs, 2022). Students included in these programmes benefit from adapted work methods, work in small groups, special and rehabilitation pedagogues, individual treatment, and so on. The adapted educational programme does not significantly differ from the basic school programme in its structure, nevertheless, it is characterised by certain peculiarities. This programme is divided into three educational periods, each of which lasts three years. In each educational period, the teacher uses individualised and differentiated approaches to work with students. In the first educational period, the pupils' knowledge is assessed descriptively, while in the remaining two periods, it is assessed numerically. Pupils with additional disabilities are also entitled to additional adaptations for knowledge testing and assessment methods. At the end of the second and third educational periods, the students' knowledge is tested based on national standardised assessment tests. However, the participation for the mentioned testing is optional. A special feature of the educational programme is the adapted curriculum with a smaller number of subjects and the consolidation of several subjects (e.g., chemistry, physics, biology, history, geography) into one subject. It is also worth noting that classes in the adapted educational programme are held in small groups of 6 to 12 students, and often due to the smaller number of students, classes are held in combined classes (Adapted educational programme with a lower educational standard, 2003). Lindblad (2013) noted that majority of the children with

mild intellectual disability is diagnosed between the ages of 10 and 12 years. This means that the education of the student in an adapted educational programme with a lower educational standard often does not take place continuously from the 1st to the 9th grade, and the student is integrated in this programme by issuing a placement decision from the Commission for the Placement of Children with Special Needs, which is often executed during the school year. The special feature of this educational programme is that, as a rule, it is taught by special and rehabilitation pedagogues, who are specially qualified to educate children with special needs and do not specialise in teaching only one subject area, but can teach all the subjects in this educational programme (Colnerič and Zupančič, 2005). Due to the lack of teachers in the Slovenian education system, especially special and rehabilitation pedagogues, the legislation allows candidates who have not received training as special and rehabilitation pedagogues or those who do not meet the conditions for working in the adapted educational programme, to apply for the job, and as a result, the candidates do not possess the special skills required for teaching children with special needs.

The specific context of the educational programme and the individual school, which many researchers of the effectiveness of lessons highlight as extremely important, was also considered in the present study, especially when choosing the factors that could influence the effectiveness of lessons as assessed by the teachers who were involved in our research study. The background data of teachers clearly plays a role within the specific context of an individual school, and it can cause differences in the perception of the importance of individual factors on the effectiveness of lessons. With regards to personality traits of the teachers, we can distinguish between three types of teacher traits, many of which have been reported as factors that influence academic success or teaching effectiveness (e.g., Wayne & Youngs, 2003; Klassen & Tze, 2014; Hanushek & Woessmann, 2017; Coenen et al., 2018). Coenen et al. (2018) distinguished between acquired characteristics of teachers that can change over time for individual teachers and be influenced by different measures (such as level and field of education, quality of faculty, teaching certificates, years of work experience) and socio-demographic characteristics of teachers (e.g., gender and ethics), which are much more difficult to influence. Various studies (e.g., Klassen & Tze, 2014; Bardach et al., 2021) often mention a third type of characteristic (i.e.,) psychological characteristics of teachers, which include the teacher's personality, motivation, perceived self-efficacy, or evaluation of one's own qualifications, well-being, and so on.

The importance of the influence of the basic education of teachers and associated professional competences, which refer to the combination of knowledge, skills, attitudes and expertise on learning performance or the effectiveness of lessons, has been highlighted by several studies (e.g., Danişman et al., 2018; Donaldson & Vaughan, 2022). Other studies have reported the influence of the years of work experience on learning performance or the effectiveness of lessons (e.g., the meta-analytic study conducted by Coenen et al., 2018; also the study by Kini & Podolsky, 2016). Furthermore, the importance of influence, or the connection between the assessment of one's own competence for teaching and the learning performance of students and/or the effectiveness of lessons has been confirmed by previous research (e.g., Klassen & Tze, 2014; Miller et al., 2017; Kim & Seo, 2018; Mahler et al., 2018): even if the perceived impact is small, it represents a critical component that contributes to high student achievement or the effectiveness of lessons. Most studies refer to the population of regular primary school students, and there are very few such studies on the population of students with special needs or those in adapted educational programmes with lower educational standards.

Therefore, in the present study, we aimed to determine whether the demographic and personal characteristics of teachers, such as basic education, years of work experience, and self-assessment of their competence to work with students with special needs, cause differences in their perception of the influence of individual factors on the effectiveness of lessons.

AIM AND HYPOTHESES

With the help of statistical analyses, we aimed to evaluate whether the attitudes of teachers towards the problem under consideration (the influence of various factors on the effectiveness of lessons) differ according to the characteristics of different groups of employees in an adapted educational programme with a lower educational standard. The purpose of the research study was to present the factors related to effectiveness of lessons that determine the attitudes of teachers and how these attitudes differ based on their basic education, years of work experience, and a self-assessment of their competence for working with students with special needs. In addition, we examined the potential reasons associated with the observed differences in the perception of the teachers.

Based on the aim of the study, we formulated three hypotheses:

- H1. Basic education can influence teachers' attitudes about the influence of individual factors on the effectiveness of lessons.
- H2. Work experience can influence teachers' attitudes about the influence of individual factors on the effectiveness of lessons.
- H3. Teachers' evaluation of their own competence for working with students with special needs can influence their attitudes about the influence of individual factors on the effectiveness of lessons.

METHODS

Participants

The research sample included a total of 112 teachers who teach in adapted educational programmes with a lower educational standard in various elementary schools in Slovenia. In terms of basic education, the sample consisted of 64 special and rehabilitation pedagogues (57.1%), 42 teachers from other pedagogical fields (37.5%), and 6 teachers from other educational (non-pedagogical) fields (5.4%). In terms of years of work experience, the sample consisted of 28 (25.0%) teachers with over 20 years of work experience, 36 (32.1%) teachers with 10 to 20 years of

work experience, 25 (22.3%) teachers with 5 to 10 years of work experience, 17 (15.2%) teachers with 2 to 5 years of work experience, and 6 (5.4%) teachers with less than two years of work experience. According to an assessment of their own competence for working with students with special needs, 34 (30.3%) teachers reported that they were fully competent to work with students with special needs, 56 (50.0%) teachers reported that they were sufficiently competent to work with students with special needs, 20 (17.9%) teachers reported being moderately competent to work with students with special needs, 1 (0.9%) teacher did not feel competent to work with students with special needs, and 1 (0.9%) teacher reported feeling completely incompetent to work with students with special needs.

Research instruments

For the purpose of the research, we designed a non-standardised survey questionnaire. This questionnaire was divided into two parts: an introductory section with questions about basic education, years of work experience, and a self-assessment of competence for working with students with special needs, and a central section, which consisted of three sets of questions that focused on factors that may influence the effectiveness of lessons in an adapted education programme with a lower educational standard. Responses to these questions were collected using a five-point Likert-type scale (from 'strongly disagree' to 'strongly agree' with each statement). There were fifteen questions in each of the three sections, and each of these questions were related to one of the fifteen selected factors that can affect the effectiveness of the lesson. The purpose of distributing the questions into three sections was to increase the reliability of the results. For the research, we classified the factors into three groups, namely factors related to the student and his or her environment, those related to the teacher, and those related to the school or organizational factors. Factors related to the students included disruptive behaviour, absenteeism, absence of work at home, motivation, and students' abilities. Factors related to the teachers

included lesson planning, teaching methods and forms, knowledge and consideration of students' individual needs, individualisation, and teacher's stress. School-related or organizational factors included teaching materials, lessons in combined classes, class size, cooperation between teachers, and teaching and didactic aids. The 15 factors that were included in the present research study were selected because they are mentioned often in the literature: research has shown that these factors have a significant influence on the effectiveness of lessons, because they can be influenced to a greater extent and meet the peculiarities and specific context of educational programmes with a lower educational standard and the characteristics of the population being addressed, which is included in it.

The reliability and internal consistency of the questionnaire on the effectiveness of lessons in an adapted educational programme with a lower educational standard was calculated using the Cronbach alpha coefficient for the entire research sample (n = 112), after the completion of data collection. The Cronbach alpha coefficient for the questionnaire on effectiveness of lessons factors was 0.912, which indicates a very high level of reliability of the questionnaire.

Procedure of collecting and processing of data

The data were collected in June 2023 from teachers who work in an adapted educational programme with a lower educational standard in Slovenian schools, which were randomly selected. A letter containing a hyperlink to the online survey was sent to the principals of the above-mentioned schools, who forwarded the letter to their employees. To ensure confidence in the anonymity of the questionnaire, a single hyperlink was generated. Respondents completed the questionnaire (on average) within 10 minutes. At the time of completion of the data collection process, 135 questionnaires were completed, of which 112 were valid.

The obtained data was statistically analysed using SPSS (Ver. 26, IBM). The following methods were used to process the obtained data: the

Kolmogorov-Smirnov test was used to assess the normality of the data and the Kruskal-Wallis test was used to examine whether teachers' attitudes towards the factors related to effectiveness of lessons differ according to their basic education, years of work experience, and self-assessment of their competence for working with students with special needs.

RESULTS

In the first step of data analysis, we used the Kolmogorov-Smirnov test to determine whether the data were normally distributed. The results of the test (Table 1) show that the data are not normally distributed, which is confirmed by the p value (i.e.,) p < 0.05 for all factors of effectiveness of lessons.

Table 1. Results of the Kolmogorov-Smirnov normality distribution test

Variable	stat value	df	p value
Individualisation	0.127	112	< 0.001
Absenteeism	0.110	112	0.002
Students' abilities	0.117	112	0.001
Absence of work at home	0.145	112	< 0.001
Motivation	0.138	112	< 0.001
Teaching and didactic aids	0.119	112	< 0.001
Lessons in combined classes	0.126	112	< 0.001
Knowledge and consideration of students' individual needs	0.116	112	0.001
Learning materials	0.146	112	< 0.001
Cooperation between teachers	0.098	112	0.010
Teachers' stress	0.103	112	0.005
Teaching methods and forms	0.111	112	0.002
Lesson planning	0.102	112	0.006
Class size	0.222	112	< 0.001
Disruptive behaviour	0.162	112	< 0.001

Given that the data is not normally distributed, we used the non-parametric Kruskal-Wallis test to examine whether there were differences in the means between three or more groups, where the values of the variables are arranged on an ordinal measurement scale. This test is considered to be a suitable alternative to the parametric analysis of variance test and it examines whether there are statistically significant differences in the means between groups.

Influence of basic education on teachers' attitudes about the influence of individual factors on the effectiveness of lessons

In the first part of the research study, we determined whether the basic education of teachers affects opinions about the factors affecting the effectiveness of lessons. We were interested in whether the participants in our research study, including special and rehabilitation pedagogues

(defectologists), those who specialised in a different pedagogic field, and those with a completely different (non-pedagogical) education, differ from each other in their assessment of the importance of individual factors on the effectiveness of lessons. Therefore, we used three groups for the analysis that were classified based on the education of the participants. The basic statistics of the average ranks according to the three basic education groups indicate that different educational groups gave different average ratings of the importance of individual factors of effectiveness of lessons. Table 2 shows an example of the basic statistics of the average ranks based on the education of the participants for one of the 15 effectiveness factors studied.

Table 2. Basic statistics of average ranks according to participants' education when considering learning materials as a factor influencing effectiveness of lessons

Variable	Basic education	N	Average rank
Learning materials	Special and rehabilitation pedagogues (defectologists)	64	60.52
	Different pedagogic field	42	55.65
	Different (non-pedagogical) education	6	19.58
	Total	112	

With the help of the Kruskal-Wallis test (Table 3), we observed statistically significant differences in certain variables (p < 0.05) based on the educational background of the participants. For example, statistically significant differences were found in the variables teaching and didactic aids (p = 0.004), learning materials (p = 0.012), and knowledge and consideration of students' in-

dividual needs (p = 0.049). For the other factors related to the effectiveness of lessons, the statistical significance was greater than p = 0.05, which indicates that, based on the education of the participants, we cannot confirm statistically significant differences in opinions about the influence of these factors on the effectiveness of lessons.

Table 3. Kruskal-Wallis test based on basic education

Variable	Hi square	df	p-value
Individualisation	4.334	2	0.114
Absenteeism	0.376	2	0.828
Students' abilities	2.843	2	0.241
Absence of work at home	1.145	2	0.564
Motivation	3.545	2	0.170
Teaching and didactic aids	11.037	2	0.004
Lessons in combined classes	4.137	2	0.126
Knowledge and consideration of students' individual needs	6.039	2	0.049
Learning materials	8.904	2	0.012
Cooperation between teachers	1.027	2	0.598
Teachers' stress	5.305	2	0.070
Teaching methods and forms	3.346	2	0.188
Lesson planning	0.616	2	0.735
Class size	2.586	2	0.274
Disruptive behaviour	1.824	2	0.402

The analysis of the average ranks showed that teaching and didactic aids are more important for special and rehabilitation pedagogues (defectologists) compared to teachers from different (non-pedagogical) fields. Based on the value of the average rank, we can also conclude that teaching and didactic aids are more important for teachers with different pedagogical education compared to teachers without pedagogical education. The findings of the research also show that knowing and considering the individual characteristics of students is crucial for teachers with different pedagogical education. This variable is in second place for the special and rehabilitation pedagogues (defectologists), while teachers with non-pedagogi-

cal education attribute that this variable has the least impact on the effectiveness of lessons. In addition, teaching materials are extremely important for special and rehabilitation pedagogues, while those with a different pedagogical education find that it is less important, and teachers with a different (non-pedagogical) education find that it has the least impact on the effectiveness of lessons.

Influence of work experience on teachers' attitudes about the influence of individual factors on the effectiveness of lessons

Next, we determined whether the work experience of teachers (expressed in years) affects the

attitudes of the participants regarding individual factors influencing the effectiveness of lessons, or whether the participants differed in terms of the importance attributed to these factors depending on how many years of work experience they had. The participants in our research study were classified into five groups according to their work experience: up to 2 years, from 2 to 5 years, from 5 to 10 years, from 10 to 20 years, and over 20 years. We therefore used five groups for the analysis, where participants were classified according to years of work experience in an adapted education-

al programme with a lower educational standard. The basic statistics of the average ranks across the five groups of participants show that different groups according to the years of work experience gave different average ratings of the importance of individual factors of effectiveness of lessons. An example of the basic statistics of average ranks according to the years of work experience for one of the fifteen effectiveness factors studied is shown in Table 4.

Table 4. Basic statistics of the average ranks according to the years of work experience for the lesson planning variable

Variable	Number of years of work experience	N	Average rank
Lesson planning	Up to 2 years	6	50.83
	From 2 to 5 years	17	54.18
	From 5 to 10 years	25	54.22
	From 10 to 20 years	36	46.29
	Over 20 years	28	74.29
	Total	112	

In order to confirm the differences between the established values of the average ranks, we performed the Kruskal-Wallis test (Table 5) and discovered that there were statistically significant differences (p < 0.05) in certain variables according to the years of work experience of the participants (i.e.,) in the lesson planning variable (p

= 0.014). For the other factors of effectiveness of lessons, the statistical significance is greater than p = 0.05, which means that based on the years of work experience of the participants, we cannot confirm statistically significant differences in their attitudes about the influence of these factors on the effectiveness of lessons.

Table 5. Kruskal-Wallis test based on years of work experience

Variable	Hi square	df	p-value
Individualisation	1.759	4	0.780
Absenteeism	1.307	4	0.860
Students' abilities	2.543	4	0.637
Absence of work at home	1.532	4	0.821
Motivation	1.684	4	0.794
Teaching and didactic aids	1.542	4	0.819
Lessons in combined classes	3.644	4	0.456
Knowledge and consideration of students' individual needs	2.813	4	0.590
Learning materials	2.727	4	0.605
Cooperation between teachers	1.628	4	0.804
Teacher stress	3.344	4	0.502
Teaching methods and forms	2.542	4	0.637
Lesson planning	12.490	4	0.014
Class size	1.794	4	0.774
Disruptive behaviour	6.865	4	0.143

The results show that teachers who have the highest number of years of work experience attribute lesson planning to having the strongest influence on the effectiveness of lessons.

Influence of teachers' evaluation of own competence for working with students with special needs on their attitudes about the influence of individual factors on the effectiveness of lessons

In the last part of the research study, we determined whether the teacher's assessment of his or her own competence for working with students with special needs influences their opinion about the effect of individual factors on the effectiveness of lessons. Therefore, we examined whether there are statistically significant differences in the opinions of the participants regarding the factors of the effectiveness of lessons according to their assessment of their own competence for working with students with special needs. Teach-

ers rated their competence for working with students with special needs on a scale from 1 to 5, where 1 corresponds to "I do not feel professionally competent" and 5 corresponds to "I feel completely professionally competent". Once again, we used five groups for the analysis, and these groups were classified according to the teachers' self-assessment of competence for working with students with special needs. The basic statistics of the average ranks according to the five groups of self-assessment of competence for working with students with special needs show that there are differences in the average assessments of the importance of individual factors of effectiveness of lessons among the different groups of participants. Table 6 shows an example of the basic statistics of the average ranks according to teacher's self-assessment of competence to work with students with special needs for one of the fifteen effectiveness factors studied.

Table 6. Basic statistics of the average ranks according to teacher's self-assessment of competence for working with students with special needs for the motivation variable

Variable	Teacher's self-assessment of competence to work with students with special needs	N	Average rank
Motivation	1- I don't feel professionally competent	1	22.00
	2	1	8.00
	3	20	39.50
	4	56	58.39
	5 – I feel completely professionally competent	34	65.82
	Total	112	

We used the Kruskal-Wallis test (Table 7) to confirm the differences between the established values of the average ranks for the five groups and found that there were statistically significant differences (p < 0.05) for certain variables in terms of teacher's self-assessment of competence for working with students with special needs (i.e.,) in the motivation variable (p = 0.017). For the other

factors of effectiveness of lessons, the statistical significance is greater than p = 0.05, which means that, based on teacher's self-assessment of competence to work with students with special needs, we cannot confirm statistically significant differences in opinions about the influence of these factors on the effectiveness of lessons.

Table 7. Kruskal-Wallis test according to teacher's self-assessment of competence for working with students with special needs

Variable	Hi square	df	p-value
Individualisation	8.468	4	0.076
Absenteeism	6.979	4	0.137
Students' abilities	4.848	4	0.303
Absence of work at home	4.608	4	0.330
Motivation	12.087	4	0.017
Teaching and didactic aids	1.811	4	0.770
Lessons in combined classes	3.892	4	0.421
Knowledge and consideration of students' individual needs	3.565	4	0.468
Learning materials	5.423	4	0.247
Cooperation between teachers	0.481	4	0.975
Teacher stress	0.568	4	0.967
Teaching methods and forms	5.355	4	0.253
Lesson planning	4.360	4	0.359
Class size	4.756	4	0.313
Disruptive behaviour	3.259	4	0.515

The results of the research indicate that motivation is attributed to have the greatest influence on the effectiveness of lessons by teachers who reported high competence for working with students with special needs.

DISCUSSION

The results of the present study show that teachers who teach in an adapted educational programme with a lower educational standard differ in their opinions about the influence of certain factors on the effectiveness of lessons, and these differences can be determined by their basic education, number of years of work experience, and a self-assessment of their competence to work with students with special needs.

The results confirm the first hypothesis of the study that basic education can influence teachers' attitudes about the influence of individual factors on the effectiveness of lessons. According to the results of the research, teaching materials have a great influence on the effectiveness of lessons for special and rehabilitation pedagogues, while this influence is less distinct for those with a different educational background. Differences in the impact of teaching materials between special and rehabilitation pedagogues and those with different educational backgrounds may be the result of the educational process of special and rehabilita-

tion pedagogues, which gives significantly greater importance to the use of appropriate teaching materials when following the individual needs of students. As a result, special and rehabilitation pedagogues are more aware of the importance of using appropriate and adapted teaching materials in teaching, since this can help better consider the diversity of learning styles, abilities, and needs of students. The highlighted difference on the impact of teaching materials is most likely due to the training received by special and rehabilitation pedagogues on the advantages of using diverse teaching materials. This knowledge enables them to easily respond to the individual needs of students, to consider students' sensory and motor characteristics, as well as to strive to develop students' functional skills. As a result, special and rehabilitation pedagogues choose a wider range of teaching materials that enable them to achieve the set goals for the student. Compared to special and rehabilitation pedagogues, the education of those with a different background may place more emphasis on the use of standardised teaching materials that are appropriate for a wider population of students and do not require as much individualisation and adaptation of instruction. Differences in the influence of teaching materials on the effectiveness of lessons for special and rehabilitation pedagogues compared to those with a different educational background, therefore, arise from the context of their work and educational background. The focus of special and rehabilitation pedagogues on individualisation and considering the diverse needs of students is thus reflected in the use of a wider range of teaching materials, with which they can more easily adjust to the individual characteristics of students. Conversely, those with a different educational background may be more likely to use standardised learning materials that are appropriate for students with typical profiles.

The results of the present research also indicates that teaching and didactic aids have a greater influence on the effectiveness of lessons as per the group of special and rehabilitation pedagogues, while this influence is less distinct in those with a different educational background. The reasons for the differences in this case can also be attributed to the basic education of special and rehabilitation pedagogues. Due to better training in the use of specialised and individually adapted teaching and didactic aids, special and rehabilitation pedagogues are more likely to be successful in achieving the set learning goals through individualised teaching approaches. Due to their basic education, they are also more qualified for multisensory teaching, which is made possible by various teaching and didactic aids, using which they can help with the learning needs of many students with special needs. With the help of teaching and didactic aids, special and rehabilitation pedagogues gain insight into the specific learning needs of their students, which enables them to better individualise lessons and plan appropriate adjustments and support. On the other hand, teachers who are not special and rehabilitation pedagogues may underestimate the impact of teaching and didactic aids on the effectiveness of lessons, as they do not have as much knowledge about the advantages of using them, and therefore do not consider them to have a significant influence on the effectiveness of lessons. The findings related to differences in the outcomes of the impact of both teaching materials and teaching aids on achieving effectiveness in lessons between special and rehabilitation pedagogues and teachers with other educational backgrounds have also been reported

in previous studies. For example, teachers, who are not special and rehabilitation pedagogues, often have difficulties in using appropriate teaching materials and teaching aids, or in establishing an appropriate learning environment when working with students with special needs (e.g., Leko et al., 2015; Rock et al., 2016; Bruggink et al., 2016). However, the results could also be linked to the findings of a study conducted among special and rehabilitation pedagogues and teachers with different educational backgrounds by Coşkun et al. (2009), which showed that special and rehabilitation pedagogues are generally better qualified to use both adapted teaching materials and adapted teaching and didactic aids when working with pupils with special needs than teachers with different educational backgrounds. This, in turn, affects their beliefs about the impact of these factors on the effectiveness of teaching.

In the present study, we also found that knowledge and consideration of students' individual needs have a greater influence on the effectiveness of lessons among teachers with different educational backgrounds than among the group of special and rehabilitation pedagogues. This difference could potentially be attributed to the lack of basic knowledge on working with students with special needs and the use of special pedagogical approaches by teachers who are not special and rehabilitation pedagogues. The lack of knowledge is most likely an additional motivation for them to acquire this knowledge and information about students' individual needs. This makes it easier for them to plan and implement lessons, more effectively deal with the individual characteristics and potential of students, communicate with parents and guardians, get a deeper understanding of the student and his/her needs, and manage diverse behaviours exhibited by students. Due to their qualifications, special and rehabilitation pedagogues most likely face the mentioned challenges more easily, which could also be the reason that they attribute knowledge and consideration of students' individual needs as having less of an influence on the effectiveness of lessons compared to teachers who are not special and rehabilitation pedagogues. The established differences according to the teachers' basic education regarding the impact of knowing and taking the special characteristics of students into account when considering the effectiveness of lessons can be linked to the findings of previous research (e.g., Parveen & Qounsar, 2018; Ngadni et al., 2023): in these studies, the authors note that teachers who do not have a special and rehabilitation pedagogy background are unable to recognise and coordinate the individual needs of students with special needs and that they lack the information and skills necessary to understand the specific needs of students with special needs. As a result, the authors found that teachers who are not special and rehabilitation pedagogues, most often have no choice but to figure out a way to find information about the individual needs and peculiarities of students and ways of working to carry out an effective learning process with these students.

The results also confirm the second hypothesis of our study that work experience can influence teachers' attitudes about the influence of individual factors on the effectiveness of lessons. Regarding the influence of number of years of work experience on teachers' opinions about the factors of effectiveness of lessons, statistically significant differences were observed in the lesson planning variable. Based on the results of the research, the impact of lesson planning on the effectiveness of lessons is more distinctive for teachers with more work experience than for those with less experience. The reasons for such differences could be attributed to various factors. The more experienced a teacher is, the deeper the understanding of the curriculum and the material they teach, which is also reflected in more comprehensively designed lesson plans. In the case of more experienced teachers, they consider the wider context of the entire learning process and provide students with holistic knowledge: this consistent with the research carried out by Koni and Krull (2018) where they determined whether there are differences in lesson planning between novice teachers and experienced teachers in Estonia. The reason for the differences could also be that, with the help of carefully designed lesson plans, experienced teachers are able to more easily recognise and consider the individual needs of students in the classroom. With the help of precise lesson plans, they can adjust teaching strategies and learning content to meet the needs of all students in the class. A more distinctive awareness of the importance of individualised lessons among more experienced teachers, which is already reflected in the phase of designing lesson plans, could be one of the key factors that strengthens their belief in their influence on the effectiveness of lessons. This is also consistent with the findings of previous research that examined differences in lesson planning between novice and experienced teachers (e.g., Gün, 2014; Pratiwi, 2024; John, 2006; Tsui, 2009): it has been shown that experienced teachers, unlike novice teachers, plan their lessons long-term and more precisely, and above all, devote themselves to adapting to the individual needs of students. They also leave room for the appropriate transformation of the learning situation, in case of contextual changes or unforeseen situations.

Differences in the attribution of the impact of lesson planning on the effectiveness of lessons among teachers with differences in work experience may also be related to the process of professional development. More experienced teachers are more likely be aware of the constant changes in education, and therefore, they consciously dedicate themselves to incorporate innovative techniques, approaches, and methods into their work. This enables them to go beyond established frameworks and to constantly develop both professionally and personally. Experienced teachers, who are devoted to professional development, often focus on improving their teaching practices. This could be one of the factors influencing the differences in the perception of teachers with different experience levels on the importance of lesson planning for the effectiveness of lessons. Through careful lesson planning, experienced teachers typically analyse past performance and identify areas for improvement. Based on this, they then set goals for their own pedagogical activities, which leads to the improvement of teaching practices. This is confirmed by studies (e.g., Gore et al., 2023; Backfisch, et al., 2020) that emphasise that experienced teachers use reflection techniques more often on their own teaching practice in order to improve their teaching strategies and effectiveness. Based on the analysis of past lesson preparations and implementations, experienced teachers can improve their pedagogical approaches. This enables them to test new ideas, analyse learning results, professionally upgrade learning content, and encourage creativity, which in turn improves their pedagogical effectiveness. This is consistent with the concept of permanent preparation for educational work, as highlighted by Kubale (2021). The author argues that this is essential for teachers as they face new students every year and during the year. This requires them to include innovations from the educational profession, the latest knowledge in the field of didactics, pedagogical psychology, and methodology in their lesson planning, and constantly search for new content and innovative teaching methods. This allows them to gain valuable experience that is crucial for their successful work in the future.

Another reason for the observed differences in the importance of the influence of lesson planning between teachers with different experience levels that should not be overlooked are the higher expectations of more experienced teachers. The higher expectations that students, parents, colleagues, and the school management have of experienced teachers can be reflected in their opinion about the importance of lesson planning, and therefore, they devote themselves to ensure a high standard of teaching through careful planning and designing of lessons. This is also confirmed by the research conducted by Richards & Farrell (2018) regarding the professional development of teachers and shows that experienced teachers have higher expectations due to professional knowledge acquired over the years and pressure put on them by various stakeholders (parents, students, school management). Therefore, they prioritise careful lesson planning in order to justify the aforementioned expectations.

The results also confirm the third hypothesis of the present study that teachers' evaluation of their own competence for working with students with special needs can influence their attitudes about the individual factors that ca affect the effectiveness of lessons. Regarding the influence of teacher's self-assessment of competence for working with students with special needs on teachers' opinions about the factors of effectiveness of lessons, statistically significant differences were observed in the motivation variable. Teachers who reported high competence to work with students with special needs attribute motivation as having a greater extent of influence on the effectiveness of lessons than those who did not feel competent to work with students with special needs. Even in this case, one of the most important reasons for the differences could be attributed to the professional development of teachers. Teachers who rate their competence for teaching students with special needs as high are more receptive to recognising the influence of motivation on their students' academic achievements. This enables them to recognise signs of lack of motivation and, as a result, introduce appropriate measures for individual support and motivation of students with the help of adapted pedagogical strategies. The connection between the assessment of one's own competence for teaching and the motivation of students was also studied by Hettinger et al. (2023). In their research, they found that teachers who feel highly competent for teaching are more committed and they try to create a motivational learning environment with the help of various strategies that can facilitate a positive effect on the students' performance.

Teachers who are highly competent are usually more sensitive to recognising the individual characteristics of their students. They also understand that motivation varies greatly between students, which allows them to adapt the pedagogical process to the needs of each student. Such teachers focus more on understanding the individual motivation of their students, which allows them to create a more adapted and engaging learning environment, since they realise that students with special needs require individual approaches for learning. The motivation of each individual student is therefore at the forefront of teaching. This explanation is consistent with the concept of encouraging learning motivation described by Juriševič (2012). This concept emphasises two key components: a flexible teacher who is professionally qualified and able to adapt teaching to the individual and group characteristics of the students, and the area of proximal motivational development, which, with the appropriate support of the teacher, motivates the student to actively participate in attractive learning situations.

On the other hand, low self-esteem among teachers regarding their own competences for working with students with special needs can lead to reduced confidence in their own abilities to teach these students. This could be one of the reasons why some teachers may not recognise the importance of student motivation and its impact on effectiveness of lessons. The lack of knowledge on types of motivational strategies or the belief that motivation is not a key factor in achieving the effectiveness of lessons could also have an impact on the attitudes of these teachers. These findings are similar to previous research (e.g., Day & Gu, 2007; Schmidt et al., 2017; Hellebaut et al., 2023) in which younger teachers who are at lower levels of professional development often feel less competent to teach, which is manifested in difficulties with structuring the learning process, including the insufficient use of motivational strategies.

Most of the mentioned reasons for the differences regarding the impact of teacher's self-assessment of competence for working with students with special needs on teachers' opinions about the factors contributing to the effectiveness of lessons can be associated with the level of the teacher's professional development. Teachers who are convinced that they have appropriate competences to work with students with special needs are generally at a higher level of professional development. In the process of gaining work experience, the teacher's focus tends to gradually shift from thinking about his/her own role to thinking about the lesson. This stage of professional development, often referred to as the student impact stage, is usually reached by teachers at higher levels of professional development. In this phase, the teacher consciously focuses on the impact of his or her actions on the students. The teacher begins to think deeply about each student as a unique individual, considering his/her characteristics and individual development (Valenčič Zuljan, 2012). In the higher stages of professional development, the teacher shifts attention from his/her own role and the functioning of the entire group to focusing on the specific needs and characteristics of the individual student. Teachers with high self-esteem regarding their own competences for working with students with special needs focus more on the individual motivation of their students. As a result, they are more likely to recognise the important influence of motivation on the effectiveness of lessons compared to teachers who doubt their abilities in this area.

CONCLUSION

In the present research study, we examined whether the attitudes of teachers towards the factors that influence the effectiveness of lessons are determined by factors such as their education, work experience, and assessment of their competence to work with students with special needs. The findings confirm the need to consider the context when introducing improvements in the field of effectiveness of lessons, especially in the sense of considering the characteristics of the individual backgrounds of individual teachers.

The research showed that different groups of teachers attributed varying levels of influence of individual variables on the effectiveness of lessons. Compared to teachers with different education, teachers with special pedagogical education emphasised the significant influence of teaching materials and teaching and didactic aids on the effectiveness of lessons. This could arise from the specific knowledge they acquire during the study of special and rehabilitation pedagogy, where additional emphasis is placed on the mentioned areas. Even among teachers with different educational backgrounds compared to special and rehabilitation pedagogues, there are differences in attributing the influence of individual variables on the effectiveness of lessons. These teachers emphasised the impact of knowledge and consideration of the individual characteristics of students on the effectiveness of lessons. This can be attributed to a lower level of competence for working with students with special needs, which in turn most likely leads to greater motivation to acquire knowledge about the specific characteristics of students. This makes it easier for them to plan and implement lessons. The effect of work experience on the effectiveness of lessons is shown only with the variable lesson planning. Teachers with the most work experience reported that lesson planning had a significant role to play compared to those with fewer years of work experience. This difference can be attributed to various factors, among which the professional development of teachers, a broader understanding of the curriculum and learning material, greater awareness of the importance of individualised lesson planning for students, and higher expectations for more experienced teachers should be highlighted. Teachers who reported high competence to work with students with special needs believed that the student's motivation is the most important factor for the effectiveness of lessons. This difference can be attributed to the professional growth of teachers who, after many years of work experience, tend to focus less on their role and more on the student as an individual. Thus, teachers at a higher level of professional development are likely to have a better understanding of the individual needs of students and therefore believe that motivation is key to achieving effective teaching.

The present research on the influence of teachers' background data on their views regarding the various factors that influence the effectiveness of lesson offers a good insight into the views of different groups of teachers who are part of an adapted educational programme with a lower educational standard. The results of the present study, which was based on a sufficiently large sample, are interesting, but it is also necessary to consider some limitations of the research, such as the occurrence of socially desirable answers to survey questions, the reliability of the survey questionnaire, and the influence of other factors that can affect the effectiveness of lessons and were not included in this research. Nevertheless, the information obtained through the present study can help school administrators to adopt improvements and measures on key factors of effective lessons.

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