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THE IMPACT OF INDIVIDUAL EDUCATION PLANS ON THE ACHIEVEMENTS OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS IN THE SUBJECT OF MATHEMATICS AND NATURAL SCIENCES

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Abstract

Throughout my career as a teacher, I encountered classes with students who had special educational needs on several occasions. I concur that including them in all activities relevant to Mathematics and natural sciences is crucial. To achieve this, an Individual Educational Plan must be created. (IEP). According to the definition provided by the author, "the INDIVIDUAL EDUCATION PLAN is a written document for the steps taken to support children with special education needs that result from the disabilities the students pose, and helps them in a special way to achieve their academic and socializing objectives."
The purpose of this study was to gain a fundamental understanding of how Mathematics and natural sciences teachers implement individualized education programs for students with special needs, how these plans affect students' academic achievement, and whether or not parents are involved in the planning process. The study's findings revealed that 68% of Mathematics and natural sciences teachers in lower and higher secondary schools use individualized education plans. Also, it was discovered that there is a statistically significant correlation between student progress or achievement in these classes and the implementation of (IEP) in Mathematics and natural sciences classes. While creating a student's customized education plan for the topic of Mathematics and natural sciences, teachers, and parents don't work together at all. The teachers agreed that students with special needs should continue their education in ordinary schools or regular classes, rather than special ones, but they claimed that they lacked sufficient training and required a better understanding of the creation and implementation of the IEP PLAN.

Keywords: Individual Education Plan, inclusion, students with special educational needs, teachers, parents, Mathematics, and natural sciences

Introduction

Because numerous human or human-related factors are taken into account throughout the teaching process, this area of the research was significant. The Kosovar society is steadily making efforts and significant steps toward becoming an inclusive and open-minded society that is accepting of those with special needs. The inclusion of children with special needs in regular classrooms is now a global phenomenon. Regardless of their background, accomplishments, or level of disability, children with special needs deserve and should be treated as equal members of society.

Teachers in regular schools frequently work with students who have special needs or learning challenges during their careers. Teachers face new challenges as the number of children with special educational needs in regular or ordinary classes grows. When these children go from the primary level of education to the lower secondary level, the problems and challenges they face increase. Up until that point, they had only worked with one teacher, but now they are obliged to work with several.

Teachers face many challenges, starting from the lack of adequate teacher training to work with these children, the lack of proper cooperation with parents, the lack of adequate teaching materials for them, the school infrastructure that does not even meet their minimum needs, the lack of assistant teachers, etc. While some teachers create personalized educational plans, the majority of them work with regular plans as with other students (IEP). The creation of the special PIA plan by the subject teachers is required because it contains the

educational objectives, the techniques and forms of work required to maximize learning outcomes, and how students are evaluated. As a result, it will be possible to track the progress and accomplishments of those students step by step.

I. Literary review

1.1. Inclusive education for kids with special needs in ordinary classrooms.

In Kosovo as well as in other countries around the world, many children with special needs continue to be denied the fundamental right to attend school with their peers. The attitudes that modern societies have toward children who are considered to have special needs appear to be one of the major challenges recorded among the many other obstacles and difficulties.

The adoption of IDEA in the USA, which led to a continual movement of organized groups of parents of children with special needs, was one of the most significant steps in establishing a new age for the education of children with special needs. In this document, it is emphasized that ordinary schools, not special ones, should be used to educate children with special needs. This is how the perspective of people with special needs, who until then were treated according to the medical paradigm, began to change. "Therefore, Inclusive education is considered to be a process through which barriers are identified in and around the school, which hinder learning, it is a process that serves to reduce and avoid them" (Le Fanu, 2005, cited in Ballhysa, 2011, p. 12).

"The academic setting at school must be modified to meet the needs of students with special needs in all respects. The social component demands that special needs children be enrolled in these ordinary classes so that they can integrate into the community and be accepted by their classmates." (Ballhysa, 2011, p. 19).

The role of parents in inclusion - The importance of parents in the process of educating children with special needs in ordinary schools is also taken into account. According to this research by Gerber & Popp (1999), "parents observe very beneficial effects on their children who are involved in ordinary schools as a result of effective cooperation with teachers. Parents see improvements in their kids' happiness, self-assurance, and academic abilities. The possibility that inclusion for these students will work grows when parents are recognized as partners and allies in working with students with special needs (Gerber & Popp, 1999, p. 250).

According to Green & Shinn (1994), "Parents of children with special needs fear inclusion in ordinary schools because they feel that their children would miss out on many of the specialized services that currently benefit them. Parents "fear that participation in ordinary schools will place their children at the center of labeling and ridicule," they add. This will have "negative effects on children's self-esteem," they claim (Green & Shinn, 1994, p. 29).

1.2. The contribution of individual educational plans (IEP) for students with special educational needs (SSEN)

To create an individual educational plan for a child with special needs, it is necessary to first identify those needs and determine which programs would be the most suitable for them. (p. 52; Peters, 2003). Many factors affect whether the Individual Education Plan is implemented successfully or unsuccessfully, but among the good ones are: the participation of parents in its creation and implementation, as well as that of teachers and other students. The factors that hinder the execution of the individualized education plan include failure to define the goals that students with disabilities should utilize to find their learning capabilities, inconsistent goals outlined in the individualized education plan, and classroom teaching methods. When designing and putting IEP into action, all of these elements should be taken into consideration." (Wearmouth, 2006).

According to the Ministry of Science and Education of Kosovo(2017), "The Individual Education Plan (IEP) is a formal educational document created for children with special educational needs for whom a decision to provide special education has been established by a municipal evaluation team or even a team at the institution

level. The purpose of the individual education plan is to organize learning and teaching systematically and to assist and monitor each child's growth individually " (p. 5).

1.3. IEP- Individual Education Plan

IEP should be created through a collaborative process that includes all parties involved, including those inside and outside of the school, such as teachers, parents of students with special needs, students, and other relevant personnel. The IEP shouldn't be shared with anybody else either (unless the parents agree), as it is a trustworthy (private) document.

The Kosovo Ministry of Science and Education (2017) states that "The following terms are defined in the IEP plan: the child's educational objectives throughout the individual plan; the outcomes of the child's learning lead to the achievement of the targeted aim; methods and types of work required to achieve the learning objectives; the resources already in place as well as those that will be required to supply the services; the personalized nature of a subject's or activity's curriculum; child evaluation forms; the individuals in charge of creating and carrying out the IEP; The process of observation and evaluation " (p. 5).

Review of the individual plan IEP: The IEP is updated at least twice a year and if there is a transition, such as a change in the child's school or any other educational change, such as a change in level, grade, school, or municipality. Participants in this process are the appropriate parties who work with the student, and the parent or guardian of the child is informed of every observational outcome (MEST, 2017). The IEP plan is divided into four sections: administration, pedagogical, rehabilitation, and transition planning. (MEST, 2017)

II. Research methodology

The purpose of the research - The goal of the study is to gain a general understanding of how individual education plans (IEP) are implemented for kids with special needs by Mathematics and natural sciences teachers, how those plans impact students' learning outcomes in that subject, and whether or not parents are involved in the process of developing IEPs for their kids.

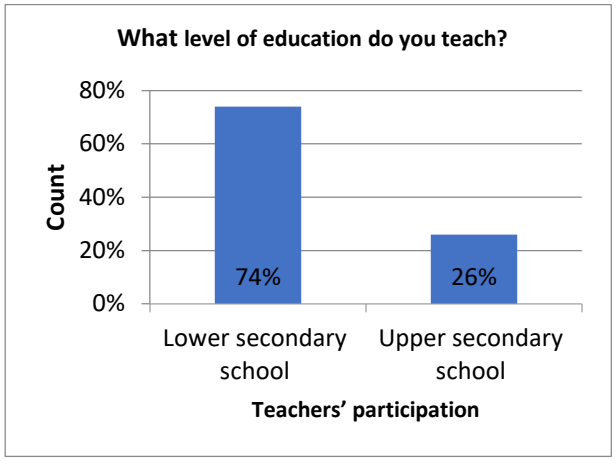
Hypotheses - **Hypothesis 1**: The PIA plan for students with special needs is not sufficiently implemented by the teachers of the Mathematics and natural sciences; **Hypothesis 2**: There is a correlation between the implementation of the PIA plan and the success or achievements of students in lessons; **Hypothesis 3**: Parents are not an integral part of planning the PIA plan in the Mathematics and natural sciences.

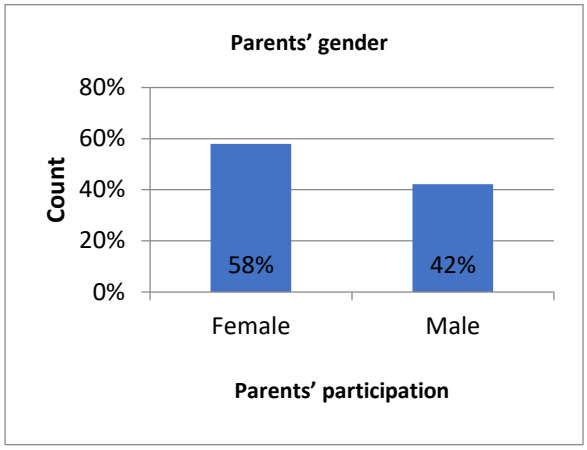
III. Research outcomes

Teachers and parents of children with special needs were surveyed using questionnaires to get the data required for the study. Based on Ballhysa's (2013) Ph.D. thesis, the questionnaire was modified to meet the requirements of the study.

The analysis of the research findings and the testing of the hypotheses are both covered in this chapter. 50 Mathematics and natural sciences teachers from lower secondary and higher secondary schools and 38 parents of children with special needs, whose children had been identified as having special needs by teachers or a professional team, made up the sample for the study. The study was conducted in Ferizaj.

3.1. Analysis of research participants Graph 1: Teachers and parents of special needs children who participated in the study are illustrated graphically.





3.2. As can be seen in the graph, the research included participation from 38 parents of special needs children in addition to 50 Mathematics and natural sciences teachers.

3.3. Testing and interpreting research hypotheses

The primary research goals, the research questions, and three hypotheses were initially presented to test the research hypotheses in advance in the methodology chapter. The data were presented in tabular and graphical style, along with several tests and research methods, to demonstrate the hypotheses. Analyses for each hypothesis and each question in this research were done using the descriptive description as well as the SPSS Crosstabulation test.

3.3.1. Study of the level of the individual education plan's (IEP) implementation in the Mathematics and natural sciences

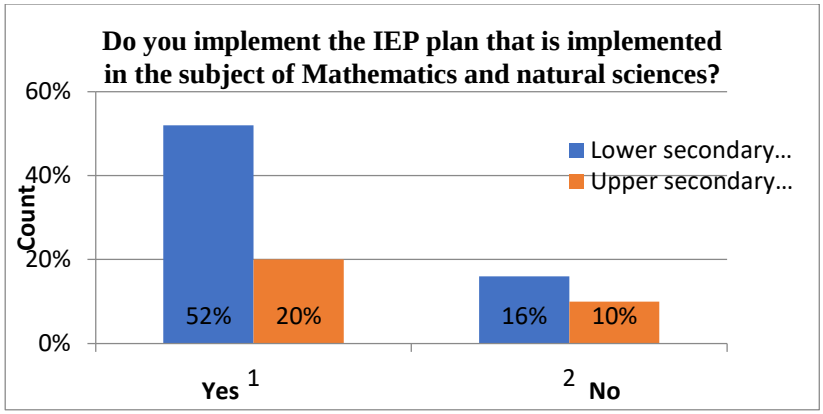
Hypothesis 1: Mathematics and natural sciences teachers do not sufficiently implement the PIA plan with students who have special needs.

Chart 1: Tabular and graphic presentation of the level of implementation of the Individual Educational Plan in the Mathematics and natural sciences

• **Do you employ the IEP plan in Mathematics and natural sciences classes with students who have special needs?** • **What level of education do you teach?** **Crosstabulation**			What level of education do you teach		**Total**
			Lower secondary school	Upper secondary school	
Do you employ the IEP plan in Mathematics and natural sciences classes with students who have special needs?	**Yes**	Count within % Do you employ the IEP plan in Mathematics and natural sciences classes with students who have special needs?	26	8	34
	No	Count within % Do you employ the IEP plan in Mathematics and natural sciences classes with students who have special needs?	10	6	16
Total		Count within % Do you employ the IEP plan in Mathematics and natural sciences classes with students who have special needs?	36	14	50

The survey's findings are displayed graphically and in tabular form. Chart 1 shows that out of a total of 36 Mathematics and natural sciences teachers in lower secondary schools, 26 of them use the PIA plan with students who have special needs and 10 do not. Eight of the 14 high school Mathematics and natural sciences teachers use the PIA plan with students who have special needs, while the other six do not.

Graph 2: Graphic illustration of the percentage of the IEP plan that has been implemented in the Mathematics and natural sciences.



Based on data indicators expressed as percentages (see graph 2), it can be shown that 68% of teachers execute the PIA plan, (52% of these teachers work in lower secondary schools and 16% work in upper secondary schools).On the other hand, 32% of them do not execute the plan (teachers from lower secondary schools make up 20% of this group and teachers from upper secondary schools make up 12%). In the context of the results, which indicated that 68% of teachers implement IEP plans for students with special needs, we may infer that the hypothesis suggested is incorrect.

3.3.2. Analysis of how the PIA plan has affected students' performance in the Mathematics and natural sciences

Hypothesis 2: The achievement and education of children with special needs are impacted by the PIA plan's implementation in the Mathematics and natural sciences classes.

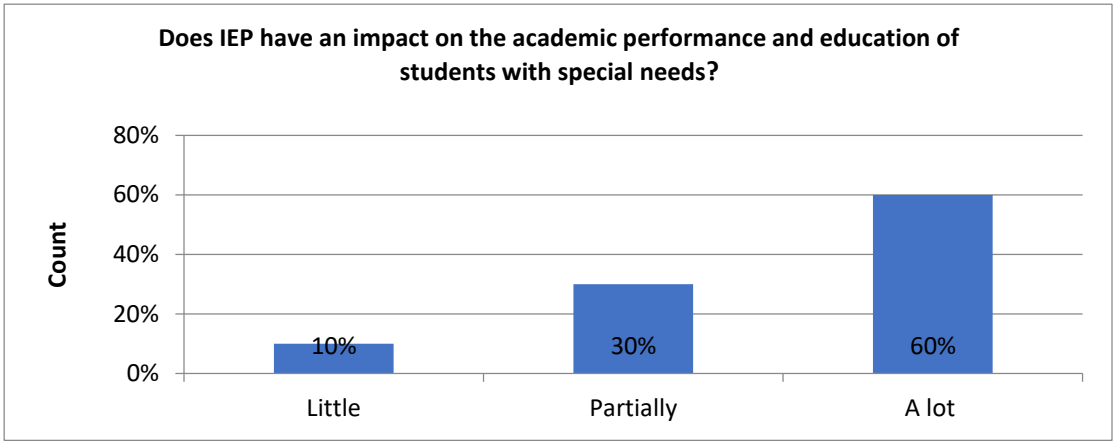
Chart 2: Tabular illustration of the correlation between the IEP plan's use and the successes or achievements of children with special educational needs during lessons.

Does IEP have an impact on the academic performance and education of students with special needs? The use of the IEP plan in the Mathematics and natural sciences class affects the students' achievements because it is adapted to their needs		Does IEP have an impact on the academic performance and education of students with special needs?	The use of the IEP plan in the Mathematics and natural sciences class affects the students' achievements because it is adapted to their needs
Does IEP have an impact on the academic performance and education of students with special needs?	Pearson Correlation	1	.592**
	Sig. (2-tailed)		.000
	N	50	50
The use of the IEP plan in the Mathematics and natural sciences class affects the students' achievements because it is adapted to their needs	Pearson Correlation	.592**	1
	Sig. (2-tailed)	.000	
	N	50	50

*At a level of 0.01, the correlation is valid at 0.01 (mutual).

The usage of the PIA plan and the academic success of kids with special needs are significantly correlated (r = 0.592), according to Chart 2. This correlation has a statistical significance because p < 0.01 (sign. 000). In this situation, we can say that the presented hypothesis—according to which there is a correlation between the use of the IEP plan and learning achievements for kids with special educational needs—is accepted.

Graph 3: A visual illustration of how the PIA plan has affected the success or achievements of kids with special needs



Graph 3: reveals that 60% of respondents said the PIA plan's use has a significant impact on the success or achievements of students with special needs, 30% said it has a moderate impact, and 10% said it has a minimal impact.

3.3.3. Analysis of the process for creating an IEP for children with special needs in the Mathematics and natural sciences

Hypothesis 3: Parents are not an integral part of planning the IEP plan in the Mathematics and natural sciences.

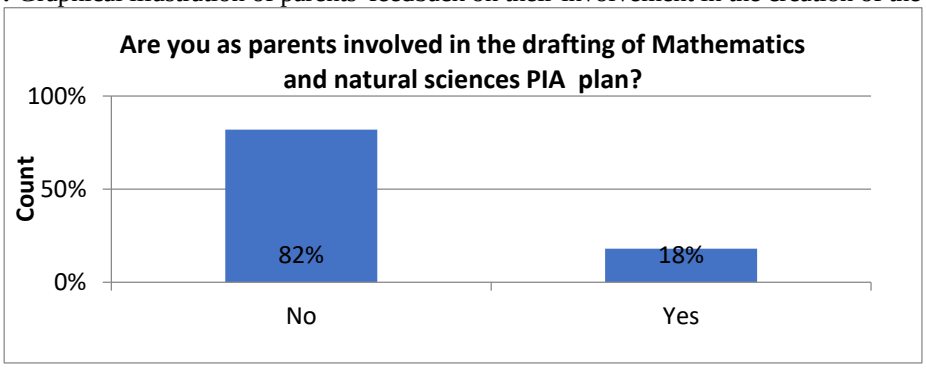
Chart 3: Demonstrates the correlation between the opinions expressed by teachers and parents regarding their participation in the creation of the PIA plan for the Mathematics and natural sciences.

How closely do you cooperate with parents to create the IEP? Are you as parents invited to participate in the drafting of the Mathematics and Natural Sciences PIA plan?		How closely do you cooperate with parents to create the IEP?	Are you as parents involved in the drafting of the Mathematics and Natural Sciences PIA plan?
How closely do you cooperate with parents to create the IEP?	Pearson Correlation	1	-.344*
	Sig. (2-tailed)		.034
	N	50	38
Are you as parents involved in the drafting of the Mathematics and Natural Sciences PIA plan?	Pearson Correlation	-.344*	1
	Sig. (2-tailed)	.034	
	N	38	38

*At a level of 0.05, the correlation is valid 0.05 **(mutual).**

Chart 3 shows that there is a low correlation, with a negative direction (r = -0.344) between the statements of parents and teachers regarding the participation of parents in the planning of the PIA plan in the Mathematics and natural sciences. This correlation is statistically significant since $p < 0.05$ (sig. 0.034), which means that over 80% of parents declared that they do not participate in the planning of the PIA plan in the Mathematics and natural sciences for their children (see graph 4). In this case, we can say that the raised hypothesis is accepted, according to which: Parents are not an integral part of planning the PIA plan in the Mathematics and natural sciences.

Graph 4: Graphical illustration of parents' feedback on their involvement in the creation of the IEP plan



IV. Discussion of research outcomes

4.1. A discussion of the individual educational plan's (IEP) level of implementation in the Mathematics and natural sciences

To confirm the extent of implementation of the IEP plan the preceding research question was presented "How much do the teachers of the subject of Mathematics and natural sciences implement the individual education plan (IEP) for children with special needs?" Due to this, we came up with the following claim: Mathematics and natural sciences teachers do not effectively apply the IEP plan to students who have special needs. According to an analysis of the research's findings, 68% of teachers use the PIA plan, compared to 32% who do not (of whom 52% teach in lower secondary schools and 16% in upper secondary schools), while 20% of these educators who do not implement the IEP work in lower secondary schools, and 12% teach in upper secondary schools. Regarding the results, which indicated that 68% of teachers implement the PIA plan with students who have special needs, we may conclude that the hypothesis presented is inaccurate and that this is the case (see Graph 2).

4.2. Discussion regarding the impact of the PIA plan on students' achievements in the Mathematics and natural sciences

The study question was earlier addressed: Is there a relationship between the implementation of the IEP plan and the performance or achievements of pupils in lessons? Because of this, the hypothesis that there is a link between student achievement in lessons and the IEP plan's implementation was made. After the analysis of the research results, it was found that there is a significant correlation, with a positive direction ($r = 0.592$) between the use of the IEP plan and the achievements of students with special needs (see chart 2). Also, 60% of the respondents declared that the use of the PIA plan greatly affects the success or achievements of students with special educational needs (see Graph 3).

4.3. Mathematics and natural sciences -related discussion on the method of creating a PIA plan for students with special needs.

The research question previously presented was, "Are parents participating in the creation of the PIA plan for their children in the Mathematics and natural sciences?" to demonstrate whether parents of children with special educational needs do so. Due to this, we came up with the hypothesis that parents are not an integral part of planning the IEP plan in the Mathematics and natural sciences.
The research's findings were examined, and it was shown that 82% of parents don't take part in the PIA plan's creation for their kids. The statements of teachers and parents on parental involvement in the planning of the PIA plan for the Mathematics and natural sciences are correlated, although only weakly and in a negative

direction (r = -0.344). This correlation is statistically significant since $p < 0.05$ (sig. 0.034). In this case, we can say that the presented hypothesis is accepted, according to which parents are not an integral part of the planning of the PIA plan in the Mathematics and natural sciences.

V. Conclusions

If there are students in the class with special needs, this is regarded as a significant element that influences how the Mathematics and natural sciences teachers' attitudes toward them are reflected in the class. They are deeply aware of the need to give their all to integrate these children socially, emotionally, and educationally, participate in activities, and improve their academic performance. Every one of them must be ready from the start to create their plan because teaching a class that includes children with special needs is challenging for them all.

Following the results' examination, discussion, and comparison with those of other researchers, we were able to come to the following conclusions:

• It was found that 32% (n=16) of the teachers do not implement the individual educational plan (IEP), whereas 68% (n=34, out of a total of 50 teachers) do. It should be emphasized that, in contrast to teachers at upper secondary schools, lower secondary school teachers are mainly responsible for implementing the PIA plan. Also, the IEP plan is adapted to students' specific needs, according to 90% of the teachers' opinions;

• It was revealed that there is a statistically significant connection between the achievements or success in lessons of students with special needs and the implementation of the individual educational plan (IEP) in the biology subject.

• It was reported that 52% (n=27) of the teachers did not work with parents at all to create the IEP in the Mathematics and natural sciences subject and that over 80% (n=31) of the parents who claim they don't participate and that they don't have a copy of their children's IEP plans.

• When asked if they had received enough training to deal with these kids, 54% (n=27) of the teachers said they had not, and that they needed more training about the compilation and implementation of the individual plan

• More than 80% of respondents agreed that special needs pupils should take regular classes or attend ordinary, not special classes. The same was said by the parents, who emphasized that they enrolled their children in regular schools so that they would feel equal to others and could more easily integrate into society (95%). However, those schools are not ideal (84%) for their kids because the parents are not at all happy with the level of teacher cooperation (53%, n=20). All parties agree that having the assistant teacher present is essential because it will make working with pupils who have special educational needs much easier.

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