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PRESENCE OF LEARNER AUTONOMY AS AN ELEMENT OF THE TARGET MODEL OF MOTIVATION IN ELEMENTARY MATHEMATICS EDUCATION**

Abstract: Authors draw attention to the TARGET model for stimulating student motivation and single out the category of learner/student autonomy in instruction as a major motivation tool. In view of this, they start from the fact that to motivate students, we must satisfy their need for autonomy, create conditions in which they can experience the feeling of personal initiative, actively participate in math classes and make decisions regarding their activities in the learning process, methods of assessment, instruction methods used in class, as well as methods of content and task realisation. Authors organised a survey on a sample of teachers and students the aim of which was to examine teachers' opinions about the importance of learner autonomy for stimulating their motivation, and students' opinions about the presence of personal autonomy in elementary mathematics education. Results show teachers recognise the importance of learner autonomy in mathematics education, but also that most students believe they are not given a chance to organise mathematics classes together with their teachers. In addition, most teachers claim student wishes and interests regarding mathematics classes should be respected, but most students are certain their wishes and interests are not acknowledged or acted on in elementary mathematics education.

Key words: *learner/student autonomy, motivation, elementary mathematics education, TARGET model.*

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INTRODUCTION

Student motivation represents one of the most important elements of instruction, but also "the most important factor educators can target in order to improve learning" (Vero & Puka, 2017: 58). In the field of mathematics education, motivation represents a desirable outcome and a means for improving understanding (Pantziara & Philippou, 2015: 386), a basis for studying content, but also the ultimate result of elementary mathematics education. Learning can be successful if preceded by strong motivation, i.e. student's wish and intention to put in effort to learn something and acquire certain knowledge (Egerić, 2001: 36). All this obligates teachers to motivate students to master mathmatics content to the best of their ability, and to make mathematics education such as to result in the development of existing, and the creation of new and stronger student motivation to learn mathematics (Špijunović i Maričić, 2016: 411).

According to J. Bruner, student motivation in the process of education represents a complex system the formation and optimal maintenance of which requires us to introduce students to the goals of education and learning (as cited in Antonijević, 2010: 57). To be a successful learner, "one doesn't need ability (capability) only, but a desire (motivation) as well" (Trebješanin, 2009: 9). Students will be more interested in learning and more willing to perform certain activities if supported by teachers in activities for which there is intrinsic motivation and which possess personal significance (Niemiec & Ryan, 2009). Students with intrinsic motivation are "determined even in failure, prone to choosing harder tasks, etc, without expecting special rewards or acknowledgement" (Špijunović i Maričić, 2016: 412). Hence the recommendation that teachers in elementary mathematics education should offer the possibility of choice and autonomy to students as often as possible, and use different motivation strategies to stimulate them.

The most useful way of understanding student motivation is by examining their behaviour focused on achieving a particular goal (Mansfield, 2010). Based on these views, most researchers of motivation switched from need-oriented discusson to goal-oriented discussion: destination points or designated results of planned behavioural patterns (Brophy, 2015: 91). The *achievement goal theory* is precisely what forms the basis for unifying current research on motivation aspects in education referring to expectations. The core of this theory implies shifting emphasis from behaviour to cognition, from quantitative to qualitative aspects of motivation and from individual to social domain (Brophy, 2015). Ames and her associates discovered that the environment in which the student learns has a great impact on motivation, because it creates a motivational climate that influences the student's view of the goal (Ames & Archer, 1988). In that sense, it is necessary to identify elements of the environment structure (classroom) that contribute to the designated orientation on mastering content and impact motivational climate that directly influences orientation on student achievement (Ames, 1992). The TARGET model of motivation has been developed based on these theoretical reflections.

The TARGET model for stimulating student motivation in instruction is the work of two authors, Epstein & Ames (Epstein, 1989; Ames, 1992), who used the achievement goal theory, which relies on the development of particular student goals and stimulation of classroom climate oritented toward mastering content and skills as the starting point of their construct. These authors began constructing their model from the understanding of individual motivation, i.e. taking into account the meaning of achievement-oriented behaviour for an individual and the function of that behaviour. The TARGET model comprises six categories which put together make the climate in the classroom and influence student behaviour and their management of that behaviour. TARGET stands for the following concepts: *T*ask, *A*uthority, *R*ecognition, *G*rouping, *E*valuation, and *T*ime. The main purpose of this model is to stimulate students to learn and master content or skills provided they are appropriately managed. Elements of the TARGET structure are mutually dependent and interwoven, but their combined impact on student motivation is great. To efficiently stimulate motivation, one must uphold all the aforementioned structures, whereas emphasising individual structures results in short-term motivation (Ames, 1992).

Engagement, decision-making and student autonomy are all relevant dimensions of authority structure (Epstein, 1989; Ames, 1992). This paper distinguishes the concept of *student/learner autonomy* within the TARGET model for stimulating student motivation in mathematics education. This dimension implies student ability to achieve roles of the leader, develop the feeling of personal control and independence in the learning process (Ames, 1992; as cited in Bojović, 2017: 113). According to Lalić-Vučetić, satisfying student's needs for autonomy and competence represents "a major prerequisite for maintaining intrinsic motivation, so the dominant problem is how to preserve the quality of motivation in the process of formal learning" (2017: 36). Brophy (2015) also believes that to achieve student motivation, it is important to satisfy their need for autonomy, competence and relatedness, as well as the need to feel connected to others in the environment, to efficiently operate in it and to experience the feeling of personal initiative. To avoid the feeling of being controlled and pressured in students, the atmosphere in the classroom and in school in general should be conducive to the satisfaction of these needs so the students would feel they are given the freedom of choice in class. Epstein believes students should be given the opportunity to actively participate in the learning process by giving them roles of the leader, possibility of choice and opportunity to fashion the role on their own (Epstein, 1989). Research results indicate students with a strong sense of autonomy in class express a higher level of engagement in the learning process, their intrinsic motivation is stronger, they are more determined and achieve better results (Lalić-Vučetić, 2016: 8).

Analysing student autonomy in the classroom and ways to stimulate them to actively engage in instruction, I. Bojović (2017) cites practical implications related to student autonomy in the form of statements which reflect the compliance with the principles of student autonomy in instruction: activities in class allow students to actively engage in the learning process by assuming roles of the leader, provide them with the possibility of choice and opportunity to make decisions on their own; students' desires in the process of planning instruction are acknowledged (choice of

instruction methods, division into groups, roles within the group, assessment methods, etc.); students are given the opportunity to solve problems "in their own way"; activities that stimulate student independence are planned; students' views are taken into account; every student is given a chance to demonstrate their independence (2017: 118). Motivation strategies stated above can help students feel they have an active role in the process of learning and teaching, thus shifting from the position of a passive observer to the position of an active participant in the teaching process.

The type and frequency of engagement in mathematics classes determines whether students are active or passive in the achievement process. Active students are those that take part in decision-making about topics they want to study, those that participate in knowledge and skill assessment and seek help without shame or fear if something is unclear to them. Teachers should partner up with students to develop skills related to personal responsibility for one's learning in mathematics education. Students should participate in decision-making together with teachers, because authority of the teacher should be shared with students in such a way as to carefully and respectfully handle their needs and feelings (Bojović, 2017). This way, students are given the opportunity to actively engage in mathematics education and make decisions about their activities in the learning process, methods of assessment, instruction methods used in class, as well as methods of content and task realisation. We should pay special attention to the fact underlined by Brophy – all students should be offered autonomy and possibility of choice, not just those with high academic achievement, as is a common practice among many teachers (2015: 287).

Therefore, we should encourage and stimulate student autonomy and provide appropriate support for students who require more help. Ames particularly emphasises the fact that by giving students the opportunity to make choices, we increase their feeling of importance in the learning process organisation, which further motivates students to master content (Ames, 1992: 266). Each activity of the teacher aimed at stimulating student autonomy will help develop positive attitudes and feelings toward one's abilities, school courses, school itself, as well as toward the learning process. This way, teachers create and stimulate additional motivation both in the classroom and outside of it.

What is the situation like in practice? We have no reliable knowledge of the extent of student autonomy in mathematics education in junior grades of primary school. For these reasons, we wanted to examine the situation in elementary mathematics education and analyse students' opinions about the importance of learner autonomy in stimulating their motivation to learn elementary mathematics, but also to view this problem from the perspective of students, using their opinions about the presence of learner autonomy in mathematics classes in the process.

METHODOLOGICAL FRAMEWORK

We examined representation and significance of student autonomy as a motivational factor in mathematics education for junior grades of primary school through two research tasks:

1. Examine teachers' opinions about the importance of student autonomy in stimulating their motivation;
2. Examine students' opinions about the presence of personal learner autonomy in elementary mathematics education.

Dependent variables in this research are student and teacher opinions about the importance of student autonomy in stimulating motivation in elementary mathematics education.

Independent variables are:

– for teachers: years of professional experience in teaching (less than 12 years, between 13 and 24 years, more than 25 years of experience as a teacher); level of education (college, bachelor's degree, master's degree);

– for students: gender (boys or girls) and marks in mathematics (excellent (5), very good (4), good (3), sufficient (2)).

The research was conducted in May 2018 on a sample of teachers (N = 104) chosen from the population of teachers working in primary schools in Serbia during academic year 2017/2018 and a sample of students (N = 112) who attended the fourth grade of primary school during 2017/2018. The student sample was chosen from the classes headed by teachers from the teacher sample. The sample encompasses teachers with different professional experience and level of education, as well as students of the fourth grade of primary school, but of different gender and different achievement in elementary mathematics education. The highest percent of respondents were teachers whose professional experience falls in the range between *13 and 25 years* (37.5%), followed by teachers with more than *12 years* of professional experience (34.61%), whereas the smallest percent of respondents have *over 25 years* of professional experience (27.89%). Among the respondents, 55.77% teachers have a bachelor's degree, 24.04% have a master's degree, whereas 20.19% are college graduates. When it comes to the structure of the student sample, 50.89% are boys, and 49.11% are girls. Most students scored excellent (5) (50.89%) and very good (4) (29.46%), followed by good (3) (12.5%) and satisfactory 2 (7.15%) marks in mathematics.

The research was based on the implementation of a descriptive method. Data necessary for the research were collected through a survey. We created two survey questionnaires containing closed-ended questions, one for students and the other for teachers. The value of the Cronbach alpha coefficient of the teacher survey equalled 0.887, and 0.81 for student, which indicates a high reliability of the instruments and

justifies its acceptability. The survey was anonymous to ensure respondent sincerity and avoid giving desired answers.

Data obtained in the survey were processed with the IBM SPSS Statistics 20. Descriptive statistics measures used include frequencies, percents and a chi-square test.

RESEARCH RESULTS

Teachers' Opinions about the Importance of Student Autonomy in Elementary Mathematics Education Aimed At Stimulating Student Motivation

The first research task was to examine teachers' opinions about the importance of student autonomy with the aim of stimulating their motivation in elementary mathematics education. We acquired the responses to the following questions from the teachers in the survey (*yes, undecided, no*):

– In your opinion, would students be more motivated to learn if allowed to take part in realisation and planning of math classes?

– In your opinion, should students' wishes and interests be acknowledged and acted on in math classes?

Results show that most teachers (60.6%) think students would *be more motivated to learn* if allowed to take part in the organisation and planning of math classes. A quarter of teachers declared as undecided, whereas 14.4% of teachers expressed a negative attitude (Table 1).

Table 1. Opinions of teachers with different professional experience about the motivational significance of student participation in organisation and planning of math classes

Years of experience		Yes	Undecided	No	Σ	
Less than 12 years	f	26	7	3	36	$\chi^2 = 6.181$ df = 4 p = 0.186
	%	72.2	19.4	8.3	100.0	
Between 13 and 25 years	f	23	8	8	39	
	%	59.0	20.5	20.5	100.0	
Over 25 years	f	14	11	4	29	
	%	48.3	37.9	13.8	100.0	
Σ	f	63	26	15	104	
	%	60.6	25.0	14.4	100.0	

Looking at Table 1, we can see that least experienced teachers predominantly (72.2%) believe student participation in the organisation and planning of math classes improves student motivation to learn in elementary mathematics education, whereas most experienced teachers are least convinced in the accuracy of this

statement (48.3%). Most teachers who responded negatively have between 13 and 25 years of experience in education (20.5%), whereas the smallest number of teachers who responded negatively have less than 12 years of experience (8.3%). However, the value of the chi-square test ($\chi^2 = 6.181$; df = 4; p = 0.186) shows there is no statistically significant difference in motivational importance of student participation in the organisation and planning of math classes between different groups of teachers.

When it comes to the opinions of teachers with different levels of education, we can see that teachers with a bachelor's and master's degree have a more positive outloook on student autonomy in the realisation and planning of math classes in comparison to teachers with college degrees (Table 2).

Table 2. Opinions of teachers with different levels of education about motivational importance of student participation in organisation and planning of math classes

Level of education		Yes	Undecided	No	Σ	
College	f	9	8	4	21	$\chi^2 = 7.773$ df = 4 p = 0.100
	%	42.9	38.1	19.0	100.0	
Bachelor's degree	f	38	15	5	58	
	%	65.5	25.9	8.6	100.0	
Master's degree	f	16	3	6	25	
	%	64.0	12.0	24.0	100.0	
Σ	f	63	26	15	104	
	%	60.6	25.0	14.4	100.0	

The calculated value ($\chi^2 = 7.773$; df = 4; p = 0.100) does not confirm the statistical significance of differences observed in the opinions of teachers with different levels of initial education about motivational importance of student participation in the realisation and planning of math classes.

With the next question, we wanted to examine teachers' opinions about *whether student wishes and interests should be taken into account in math classes*, in other words, whether student perspective should be acknowledged. Most teachers (73.1%) believe that student wishes and interests should be acknowledged in math classes, 22.1% teachers were undecided, whereas only 4.8% of teachers believe that student wishes and interests should be ignored in elementary mathematics education (Table 3).

Further analysis was focused on learning whether there is a statistically significant difference in the opinions of teachers with regard to their professional experience. The results are shown in Table 3.

Table 3. Opinions of teachers with different professional experience about the need to acknowledge student wishes and interests in elementary mathematics education

Years of experience		Yes	Undecided	No	Σ	
Less than 12 years	f	26	8	2	36	$\chi^2 = 1.287$ df = 4 p = 0.863
	%	72.2	22.2	5,6	100.0	
Between 13 and 25 years	f	28	10	1	39	
	%	71.8	25.6	2.6	100.0	
Over 25 years	f	22	5	2	29	
	%	75.9	17.24	6.89	100.0	
Σ	f	76	23	5	104	
	%	73.1	22.1	4.8	100	

Observing the data shown in Table 3, we can see there are small differences in the opinions of teachers with different professional experience, and the value of the chi-square test ($\chi^2 = 1.287$; df = 4; p = 0.863) indicates there is no statistically significant difference in the need to acknowledge student wishes and interests in elementary mathematics education between teachers of different experience.

Table 4. Opinions of teachers with different levels of education about txe need to acknowledge student wishes and interests in elementary mathematics education

Level of education		Yes	Undecided	No	Σ	
College	f	16	3	2	21	$\chi^2 = 7.392$ df = 4 p = 0.116
	%	76.2	19.1	4.7	100.0	
Bachelor's degree	f	38	18	2	58	
	%	65.5	31.0	3.4	100.0	
Master's degree	f	22	2	1	25	
	%	88.0	8.0	4.0	100.0	
Σ	f	76	23	5	104	
	%	73.1	22.1	4.8	100.0	

From the results shown in Table 4, most teachers who believe that it is important to acknolwedge student wishes and interests have a master's degree (76.1%), where as the least number of teachers have a bachelor's degree (65.5%), but the resulting value ($\chi^2 = 7.392$; df = 4; p = 0.116) doesn't indicate any statistical significance in the difference of opinions with regard to the teachers' level of education.

Students' Opinions about the Presence of Learner Autonomy in Math Classes

To understand the current practice in elementary mathematics education, we examined students' opinions as well. They also represented control of teachers' opinions. Students were part of a group that provided opinions about the presence of learner autonomy in math classes. Students expressed their opinions by answering the following questions (*yes, undecided, no*):

- *Are you allowed to organise lessons in math classes together with the teacher (to suggest to do things differently, to suggest alternative assessment methods)?*
- *Are you ever allowed to do the things you want or things that interest you in math classes?*

Most students (51.8%) think they *do not* have the opportunity to organise classes the way they would like, whereas 25.9% of students believe they *do* have such an opportunity. Others (22.3%) were *undecided* (Table 5).

Table 5. Opinions of students of both genders about opportunities to organise math classes on their own in elementary mathematics education

Gender		Yes	Undecided	No	Σ	
Girls	f	12	13	30	55	$\chi^2 = 0.936$
	%	21.8	23.6	54.5	100.0	df = 2
Boys	f	17	12	28	57	p = 0.626
	%	29.8	21.1	49.1	100.0	
Σ	f	29	25	58	112	
	%	25.9	22.3	51.8	100.0	

Looking at Table 5, we can see that an equal number of male and female students believe they *do not* have the opportunity to organise classes or offer suggestions. The number of male students who believe they are allowed to do so is slightly higher (29.8%) compared to female students (21.8%). More girls were undecided than boys. The resulting chi-square test ($\chi^2 = 0.936$; df = 2; p = 0.626) indicates there is no statistically significant difference in the opinions concerning the possibility to organise classes together with the teacher, suggest alternative instruction or assessment methods in elementary mathematics education between different genders.

Table 6. Opinions of students about the opportunities to organise classes in mathematics education on their own with regard to their achievement

		Yes	Undecided	No	Σ	
Satisfactory (2)	f	4	2	2	8	χ^2=7.902 df = 6 p = 0.245
	%	50.0	25.0	25.0	100.0	
Good (3)	f	1	5	8	14	
	%	7.1	35.7	57.1	100.0	
Very good (4)	f	8	9	16	33	
	%	24.2	27.3	48.5	100.0	
Excellent (5)	f	16	9	32	57	
	%	28.1	15.8	56.1	100,0	
Σ	f	29	25	58	112	
	%	25.9	22.3	51.8	100.0	

Analysing the opinions of students with different marks in math, we can see the opinions of students that scored very good (4) and excellent (5) marks are fairly uniform, whereas the opinions of students whose achievement was assessed as satisfactory (2) are divided. Most undecided students are those who scored good (3) marks. The resulting value of the chi-square test χ^2 = 7.902; df = 6; p = 0.245) indicates there is no statistically significant difference in the opinions of students with different marks about the presence of opportunities for independent organisation of classes in elementary mathematics education.

Answering the question *whether they do what they would want and what interests them in math classes*, most students (46.0%) answered their wishes and interests *are not acknowledged* in math classes, 24.3% believe their wishes and interests *are acknowledged and acted on*, whereas 29.7% are *undecided* (Table 7).

Table 7. Students' opinions about acknowledgment of their wishes and interests in elementary mathematics education with regard to gender

Gender		Yes	Undecided	No	Σ	
Girls	f	14	17	24	55	χ^2 = 0.477 df = 2 p = 0.788
	%	25.9	31.5	42.6	100.0	
Boys	f	13	16	28	57	
	%	22.8	28.1	49.1	100.0	
Σ	f	27	33	51	112	
	%	24.3	29.7	46.0	100.0	

Looking at Table 7, we can observe there are small differences in opinions between students of different gender, which is further confirmed by the value of the chi-square test (χ^2 = 0.477; df = 2; p = 0.788).

Table 8. Opinions of students with different marks in mathematics about the acknowledgment of their wishes and interests in elementary mathematics education

Student marks in mathematics		Yes	Undecided	No	Σ	
Satisfactory (2)	f	4	3	1	8	$\chi^2 = 12.511$ df = 6 p = 0.051
	%	50.0	37.5	12.5	100.0	
Good (3)	f	2	8	4	14	
	%	14.3	57.1	28.6	100.0	
Very good	f	7	6	20	33	
	%	21.2	18.2	60.6	100.0	
Excellent (5)	f	14	16	27	57	
	%	25.0	28.6	46.4	100.0	
Σ	f	27	33	52	112	
	%	24.3	29.7	46.0	100.0	

The data in Table 8 show that most students who think they aren't allowed to do what they would like and what interests them in math classes are those with very good marks (4) (60.6%), followed by students with excellent marks (5) (46.4%), good (3) (28.6%), and finally satisfactory marks (12.5%).

Most students in the *undecided* category (57.1%) are those who scored good marks (3) in math, followed by those (37.5%) with satisfactory marks (2), students (28.6%) who scored excellent marks (5), and finally (18.2%) those who scored very good (4). It is interesting that students who scored the lowest marks believe they are doing what they like and what interests them in math classes. Differences in the opinions of students we observed are not statistically significant ($\chi^2 = 12.51$; df = 6, p = 0.051).

CONCLUSION

Results obtained in this research show that most teachers (60.6%) believe students would be better motivated to learn if allowed to take active part in the realisation and planning of math classes. However, most students think they are not given the chance to organise math classes together with their teacher. In addition, most teachers responded that student wishes and interests should be taken into account in math classes, because that way, we would stimulate their motivation. On the other hand, when examining students' opinions on whether they are doing things they want and things that interest them in math classes, we discovered most students believe their wishes and interests are not acknowledged or acted on in elementary mathematics education. Another interesting result is the fact that students with higher marks commonly think their wishes are not acknowledged, unlike students with lower marks who think the opposite.

Most teachers understand that by allowing students to be independent, suggest changes, express their interests and wishes openly, as well as to choose elements of the teaching process, they increase students' impression of importance in the organisation of the learning process, which motivates them to master the teaching content. But, the teaching practice shows something else entirely – students believe they are not given enough opportunity to express their autonomy in elementary mathematics education. Previous research also shows "students are convinced teachers neither acknowledge and encourage, nor openly curtail student autonomy in the teaching process" (Đerić, 2014: 21).

Results obtained in the research show that students do not have full autonomy in mathematics education, but also that teachers are well-aware of its importance. Although teachers understand the purpose of implementing procedures which support student autonomy is to stimulate student motivation, based on students' responses, we can conclude they seldom implement them in elementary mathematics education. Teachers should bear in mind that encouraging students to initiate activities on their own and making decisions related to the teaching process represents a crucial strategy by means of which they could stimulate their commitment, positive attitudes, intellectual and moral development, as well as mastery orientation (Epstein, 1989; Ames, 1992).

The question of student autonomy in mathematics education is very important. A student who demonstrates autonomy in class will also demonstrate autonomy in the learning process, which is the basic requirement in this type of instruction. Research results indicate motivation "can be developed in teacher-student interactions, provided student autonomy is stimulated in the process" (Lalić-Vučetić, 2016: 7), and also that students with a stronger sense of autonomy demonstrate a higher level of engagement in the learning process, they are more determined and achieve better results (Grolnick & Ryan, 1987). A student fully commited to the learning process, one who takes active part in math classes and makes decisions about their activities in the learning process, instruction methods used in class, realisation of the desired tasks and content, one who participates in assessment and self-assessment, evaluation and critical analysis will achieve better scores. Such students are interested in the learning content, they have a stronger achievement motivation and through personal motivation, they create an environment that suits their interests and abilities, which is again necessary for great achievement. Results obtained in this research show teachers are aware of the importance of student autonomy in instruction, that it can improve motivation to learn, as well as that strong motivation implies great achievement. These results would be a good starting point for further research about student motivation in all stages of mathematics education in primary school, and formal instruction in general. Teachers and students should become partners in the teaching-learning process, participating equally in this process and making all decisions together.

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ЗАСТУПЉЕНОСТ АУТОНОМИЈЕ УЧЕНИКА КАО ЕЛЕМЕНТА TARGET МОДЕЛА ЗА ПОДСТИЦАЊЕ МОТИВАЦИЈЕ У ПОЧЕТНОЈ НАСТАВИ МАТЕМАТИКЕ

Резиме

У раду аутори скрећу пажњу на TARGET модел за подстицање мотивације ученика у настави и издвајају категорију ауторитет ученика (Authority) и указују на значај аутономије ученика у настави као важног мотивационог средства. При томе полазе од чињенице да је за мотивацију ученика битно задовољити њихове потребе за аутономијом, створити услове да доживе осећај личне иницијативе, да активно учествују у настави математике и одлуче о својим активностима у процесу учења, начинима оцењивања, облицима рада на часу, као и о начинима реализације садржаја и задатака. На узорку учитеља и ученика организовали су истраживање с циљем да испитају мишљења учитеља о значају аутономије ученика за подстицање њихове мотивације и мишљења ученика о заступљености личне аутономије у раду у почетној настави математике. Добијени резултати показују да учитељи препознају значај аутономије ученика у настави математике, али да већина ученика сматра да нема прилику да заједно са учитељем организују час математике. Такође, већина учитеља се изјаснила да треба уважавати жеље и интересовања ученика на часовима математике, али већина ученика сматра да се не уважавају њихове жеље и интересовања на часовима у почетној настави математике.

Кључне речи: *аутономија ученика, мотивација, почетна настава математике, TARGET модел.*