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THE ROLE OF TEACHERS' SUPPORT AND ENTHUSIASM IN PREDICTING MATHEMATICS ANXIETY AND CONFIDENCE AMONG STUDENTS

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Abstract/Izvleček

The goal of this study was to examine the contribution of teachers' support and enthusiasm to explaining self-confidence and mathematics anxiety in primary-school students. The results of the t-test showed that girls and boys statistically significantly differ only in the perception of confidence variable, while no gender difference was determined in the other variables. The results of regression analysis showed that teachers' support and enthusiasm are predictors of student self-confidence, with support also making an independent contribution to explaining mathematics anxiety.

Vpliv učiteljeve podpore in zavzetosti na učenčev občutek tesnobe oz. samozavesti pri učenju matematike

Cilj te raziskave je bil preučiti prispevek učiteljeve podpore in navdušenja pri razlagi krepitve samozavesti in odprave strahu pred matematiko pri učencih osnovne šole. Rezultati t-testa so pokazali, da so se dečki in deklice statistično bistveno razlikovali v zaznavanju spremenljivke samozavesti, pri drugih spremenljivkah pa glede na spol ni bio razlik. Rezultati regresijske analize so pokazali, da sta podpora in navdušenje učiteljev napovedovalca samozavesti učencev; podpora pa tudi prispeva k razlagi strahu pred matematiko.

Keywords:
enthusiasm, mathematics anxiety, self-confidence, students, support

Ključne besede:
navdušenost, podpora, samozavest, strah pred matematiko, učenci

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Introduction

Mathematical abilities are extremely important, since they are key to understanding other scientific disciplines as well as technology and engineering, all of which are vital for training new and innovative experts (Ker, 2013). Today science and technology assume the central place in world culture, and in order for any nation to become competitive, the significance of mathematics in its education system must not be underestimated (Maliki et al., 2009). Unfortunately, many students at all education levels nowadays have a negative attitude towards mathematics and fear it, which can cause serious problems and become an obstacle in their education (Artemenko et al., 2015; Guita and Tan, 2018; Ma, 2003; Richardson and Suinn, 1972; Stodolsky, 1985; Vidić, 2016; Vidić et al., 2020; Wadlington and Wadlington, 2008).

Student confidence in mathematics entails students' belief in their own ability to learn mathematical content and successfully solve mathematical exercises. Cerbito (2020) points out the importance of self-confidence in students because it provides a good predictor of achievement in mathematics. Research indicates that students with high levels of self-confidence attain higher levels of achievement in mathematics (Miscevic-Kadijevic, 2015; Hannula et al., 2004), while students who are not successful in mathematics assess their level of self-confidence and motivation as lower (Opstad and Årethun, 2019). Moreover, high self-confidence in maths classes reduces mathematics anxiety (Kvedere, 2014).

Affective factors play a key role in teaching and learning mathematics. One of the affective factors that has earned special attention from researchers is math-related anxiety (McLeod, 1992). Mathematics anxiety is one of the common attitudinal and emotional factors that have received attention in recent years (Baloğlu and Koçak, 2006). Many questionnaires aiming to determine attitudes toward mathematics, among other dimensions, also focus on mathematics anxiety (e.g., Adediwura, 2011; Fennema and Sherman, 1976; Tapia and Marsh, 2004). It is not rare for students to suffer from math-related anxiety, which limits their ability to do mathematics and solve mathematical exercises (Ashcraft and Moore, 2009; Furner, 2017).

The results of the Programme for International Student Assessment (PISA) of 2012, in which the principal testing field was mathematical literacy, showed that 59% of the tested students often worry they will have a hard time in mathematics lessons; 33% reported becoming very tense when they have to do mathematics homework; 31% said they feel helpless when doing a mathematical exercise; and 61% of the students said they worry about poor grades in mathematics (OECD, 2013). The consequences of mathematics anxiety listed by researchers often include poor mathematical achievement, avoidance of maths classes, inability to solve mathematical problems and feelings of guilt and shame (Burton, 1979; Hendel, 1980; Richardson and Suinn, 1972; Tobias and Weissbrod, 1980). The scientific literature offers various definitions of mathematics anxiety. Cemen (1987) has defined mathematics anxiety as the state of being anxious in response to situations regarding mathematics that represent a threat to self-respect. Richardson and Suinn (1972, p. 39) stress that "mathematics anxiety involves feelings of tension and anxiety that interfere with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations". Spicer (2004, acc. to Marshall et al., 2017) has provided a simple, graphic definition of mathematics anxiety, determining it as the emotion that blocks a person's ability to think when faced with a mathematical problem. Buckley and Ribordy (1982) define mathematics anxiety as an unthinkable fear of mathematics which can impede a person in the manipulation of numbers and in solving mathematical problems in various life and academic situations. Ferguson (1986, acc. to Hlalele, 2012) has identified three common types of mathematics anxiety: mathematics test anxiety (associated with anticipating, taking and receiving mathematics tests); numerical anxiety (associated with number manipulation); and abstraction anxiety (associated with abstract mathematical content). Mathematics anxiety has no single cause but is the result of numerous factors, such as belief in the student's competence, learning without understanding, bad experiences with maths teachers and inappropriate teaching methods (Greenwood, 1984; Guita and Tan, 2018; Lutovac, 2008; Tariq and Durrani, 2012; Tobias, 1978). Jackson and Leffingwell (1999) present the results of their research, according to which the participants associated their mathematics anxiety with insensitive and careless teachers.

Moreover, previous research has indicated that support from parents and their encouragement of children in learning mathematics are both connected with better achievement in mathematics by the children (Kliman, 2006), and LeFevre et al. (2002) have shown in their research that exposing children to mathematical topics at home contributes to better mathematical skills in early childhood. On the other hand, the research done by Antolin Drešar and Lipovec (2017) has proven that parent mathematicians are less engaged in the school mathematical activities of their own children in comparison to parents who are not mathematicians, who are more involved but sense difficulty in helping their children deal with their obligations in mathematics. Previous research (Antolin and Lipovec, 2013) has found that, among parent mathematicians, the work with children does take place; however, it was not related to school activities. Instead, the activities happened spontaneously, without planning, during walks, on drives and so on. The support students receive from their adult carers (parents or teachers) has proven to be extremely important in forming students' attitudes towards mathematics.

To increase student interest in mathematics, it is important for students to experience positive emotions connected with mathematical activities (Schiefele, 2009). Each student has the right and should have the opportunity to learn mathematics with understanding and without fear, wherein the teacher's role in securing an encouraging environment and sufficient level of support becomes especially important.

Teacher support relates to student perception of the teacher as the one who cares for and helps his/her students (Trickett and Moos, 1973, acc. to Patrick et al., 2007). Affective and academic support have been recognised as two types of teacher support (Patrick et al., 2007) sometimes perceived as one unified measure, since they are inextricably connected (e.g., Wentzel, 1997). On the basis of the studied literature, Sakiz et al. (2012) emphasize that a supportive teacher cares for and stands by the students, appreciates and respects them, encourages and listens to them and has high expectations. A study by Cates and Rhymer (2003) has shown that students with greater fear of mathematics have a poorer fluency level across all mathematical operations but do not differ from other students in the accuracy of solving exercises. Precisely because of such results, the authors emphasise the role of teachers in providing students with opportunities to strengthen academic skill development beyond simple acquisition.

Support from teachers is positively correlated not only with the academic development of adolescents but also with their emotional and social development (Dubow et al., 1991; Hamre and Pianta, 2005; Roeser et al., 1996). If students experience constant teacher support, they will be able to establish quality mutual relationships. The benefits of positive perception of teacher support are reflected in increased student school engagement, student dedication to academic activities and a decrease in problematic school behaviour (Garcia-Reid et al., 2015).

Apart from teacher support, teacher enthusiasm is also regarded as a key condition for efficient instruction and student motivation for learning (Brophy and Good, 1986). Enthusiasm can be considered a complex construct that is hard to explain. Certain researchers view enthusiasm as a characteristic of teaching in the sense of motivating and vigorous teaching (Turner et al., 1998), while others perceive it as a subjective experience of teachers themselves regarding teaching in general and their particular subject (Long and Hoy, 2006). Collins (1978) has established certain indicators of high enthusiasm in teachers: varied speech intonation, frequent eye contact, moving in the course of teaching, different facial expressions, careful choice of words, use of humour and acceptance of diverse ideas and feelings. Keller et al. (2016) remark that teacher enthusiasm is studied in the form of displayed enthusiasm and as experienced enthusiasm. Displayed enthusiasm encompasses interactions between teachers, nonverbal communication and teaching styles, whereas experienced enthusiasm pertains to the teacher's inspiration in the subjects he/she teaches. Teacher enthusiasm is also often regarded as the ability to inculcate students with the importance and inner value of learning as well as the value of the content to be learned (Patrick et al., 2003; Turner et al., 2002). The teacher's enthusiasm can be inferred on the basis of his/her behaviour, preparation of teaching materials and pronounced interest in the teaching content (Patrick et al., 2003). Lazarides et al. (2019) stress the existence of theoretical models pronouncing the importance of teacher enthusiasm in forming student motivation for mathematics, but empirical research into the connection between enthusiasm and support has been implemented only in the last ten years (Frenzel et al., 2009; Frenzel et al., 2010; Kunter et al., 2013). The applied research has proven that teacher enthusiasm significantly increases student interest in mathematics, primarily because the teacher's enthusiasm transfers positive teacher emotions to the students and in such a way influences their motivation's development.

A study by Kunter et al. (2008) found that more enthusiastic teachers tend to report higher quality instructional behaviours. Further research has additionally shown that teacher enthusiasm is an important predictor of teaching quality, which in turn, positively influences student success and satisfaction (Kunter et al., 2013). Teachers with high levels of enthusiasm or intrinsic motivation for teaching positively influence students and their learning motivation (Brigham et al., 1992; Patrick et al., 2000). Zealous teachers leave little room for student boredom and misbehaviour; hence, a positive link between teacher enthusiasm and a disciplined classroom atmosphere and student motivation can be expected (OECD, 2020). Teachers who show fervour in their work are ready to develop their skills and educate themselves professionally; as principal sources of their enthusiasm, they list encounters with students, a positive atmosphere and work interactions (Wenström et al., 2018). Moreover, teachers who are filled with zeal transfer it to their students and often become role models for them (Frenzel et al., 2009). Enthusiasm in students influences their behaviour, which is positively correlated to their achievement (Brigham et al., 1992). Therefore, enthusiasm is considered an important characteristic of efficient teachers (Kunter et al., 2011).
The goal of this research was to examine the contribution of teachers' support and enthusiasm to self-confidence and mathematics anxiety in primary-school students.

Methodology

The following research tasks and hypotheses were formed according to the research goal:
1 to determine the existence of gender differences in students' perceptions of self-confidence and mathematics anxiety and teacher support and enthusiasm;
H1: There are no differences in the perceptions of the research variables between boys and girls;
2 to determine to which measure the perception of teachers' support and enthusiasm contributes in explaining student self-confidence and mathematics anxiety;
H2a: The teacher's support and enthusiasm significantly contribute to explaining students' self-confidence in mathematics;
H2b: The teacher's support and enthusiasm significantly contribute to explaining students' mathematics anxiety.

Participants and procedure

The research was implemented on an appropriate sample including 290 students from the second (N = 76), fourth (N = 77), sixth (N = 63) and eighth (N = 74) grades of a primary school in Zagreb. The average age of the participants was 10.93 years (SD = 2.27). Of the total number of participants, 144 were boys (49.66%) and 146 girls (50.34%). The research was done in May 2019, in school, under the supervision of the research team members, in 15 grades. Only those students for whom written parental consent was obtained were allowed to participate (86.31% of students from the grades involved in the study). The questions were read aloud to the younger students (2nd grade), and they independently assessed the claims. Older students needed no such help. Filling out the questionnaire lasted 30 minutes in each grade. Because lessons in the second and fourth grades are organised as class teaching, each grade has one teacher who teaches most of the school subjects (N = 8). For older students, lessons are organised as subject teaching, and the participating students from the seventh grade are taught mathematics by three mathematics teachers. Of the total number of teachers, 9 were females and 2 males.

The instrument

The instrument consisted of four scales:

Students' confidence in mathematics comprises 10 claims that indicate how self-confident students are in mathematics. The participants assessed claims such as *I have a lot of self-confidence when it comes to mathematics* and *I am able to solve mathematics problems without too much difficulty,* on a five-point Likert scale. The claims were taken from the questionnaire Attitudes toward Mathematics Inventory, ATMI (Tapia and Marsh, 2004). To verify the fitness of the items, we used Cronbach's Alpha reliability coefficient, which was calculated for our sample as $\alpha = .76$.

Students' anxiety in mathematics consists of seven claims taken from the questionnaire Attitudes toward Mathematics Inventory, ATMI (Tapia & Marsh, 2004). The following claims were also assessed on a five-point Likert scale: *My mind goes blank, and I am unable to think clearly when working with mathematics*, *It makes me nervous to even think about having to do a mathematics problem.* The obtained Cronbach's Alpha reliability coefficient is $\alpha = .86$.

Teachers' support - student perspective consists of five claims taken from the questionnaire (Kunter and Baumert, 2006).

The participants assessed their agreement with the claims on a five-point Likert scale, e.g. *Our mathematics teacher immediately knows what someone has not understood*, *Our mathematics teacher can easily tell if someone is really sad*. The obtained reliability coefficient, Cronbach's Alpha, is $\alpha = .90$.

Teachers' enthusiasm – student perspective includes two claims, also assessed on a five-point scale: *Our mathematics teacher is an enthusiastic teacher*, *Our mathematics teacher seems to really enjoy teaching* (Kunter et al., 2011). The obtained reliability coefficient, Cronbach's Alpha, is $\alpha = .73$.

Results and discussion

The first task of this research was to examine how the participants assess the research variables and to determine potential differences in these evaluations between boys and girls. Table 1 presents the mean values and the related standard deviations for all the examined variables and the results of the t-test. The results for each variable were formed so that the overall sum of the circled answers was divided by the number of claims, and so the average scale's assessment was obtained. Among the four assessed variables, the lowest assessment was attributed to the *confidence* variable, with this variable also having the lowest standard deviation ($M = 1.82$; $SD = 0.32$), which indicated a low dispersion of results. It is followed by *anxiety* ($M = 2.08$; $SD = 1.02$) and *enthusiasm,* as the variable with the highest assessment ($M = 4.15$; $SD = 0.97$). In general, the variables pertaining to the teachers are perceived significantly higher than those regarding the students.

Table 1: Means and standard deviations for all variables by student gender and t-test results

	Total ($N = 290$)		Boys ($N = 144$)		Girls ($N = 146$)		*t*	*p*
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*		
confidence	1.82	0.32	1.89	0.29	1.76	0.33	3.504	.001
anxiety	2.08	1.02	2.00	1.00	2.16	1.05	-1.366	.173
support	3.67	1.20	3.68	1.23	3.65	1.19	.240	.810
enthusiasm	4.15	0.97	4.11	1.09	4.18	0.84	-.614	.539

The results of the t-test show that boys and girls differ significantly only in the perception of *confidence* variable, where boys ($M = 1.89$; $SD = 0.29$) show somewhat greater self-confidence than girls ($M = 1.76$; $SD = 0.33$) (Table 1).

The results of the self-confidence assessment are in accord with the results of a meta-analysis conducted by Hyde et al. (1990), which showed that male subjects had moderately higher maths self-confidence than female subjects. It should be emphasized that gender differences in self-confidence were not found in one part of the related research (Mohd et al., 2011; Yeo et al., 2015). A possible explanation for the gender differences in the *confidence* variable could be that the strategies and methods used in the teaching process were not equally appropriate for boys and girls. Girls have more self-confidence and enjoy mathematics more when cooperative work is applied (Boaler, 1997); therefore, more frequent use of cooperative learning should be planned and used in mathematics classes.

As shown in Table 1, gender differences for the *anxiety* variable are not statistically significant. The results are in line with those obtainrd by Al-Shannaq and Leppavirta (2020) and with the results of research conducted in the Republic of Croatia with primary school students in grades 5-7, which found no gender differences in mathematics anxiety (Vizek-Vidović, 1994). The available literature shows that one part of the research proved gender to have a significant effect on the mathematics anxiety variable, where female participants have greater evaluations that the males (Arambašić et al., 2005; Braš Roth et al, 2014; Else-Quest et al., 2010; Ma, 1999). There is more than one cause of mathematics anxiety, i.e., many different factors can influence it. One of these is the belief that men are better at maths than women (Tobias, 1978) and that not only mathematics as a school subject, but also future careers based on a strong mathematical basis are more appropriate for men than women (Rapp, 2015, acc. to Forgasz and Markovits, 2018). Hunt (1985) claims to have found evident differences between men and women in mathematics anxiety and that women are more afraid of mathematics than men are. Similar claims come from Devine et al. (2012), who state that girls mostly report higher levels of mathematics anxiety than boys. Ahmed et al. (2012) have researched mutual relationships between self-confidence and mathematics anxiety and proved that higher self-concept leads to decreased anxiety, which in turn, induces higher self-concept. In line with this result, we could expect that by applying more adequate strategies and methods, a double benefit would occur, i.e., the increase in student self-confidence would lessen their anxiety.

The next research task was to examine the contribution of the teacher's support and enthusiasm to students' self-confidence in mathematics. Hierarchical regression analysis was implemented in two steps to anticipate students' self-confidence.

The students' demographic variables (age and gender) were introduced in the first step and support and enthusiasm in the second step. Before the implementation of the regression analysis, the correlations between variables were checked, and it was established that all are moderate but significant, with 1% risk. Therefore, all the variables are fit for the regression analysis, as it only separates those factors with independent anticipation contribution. All the elements that need to be satisfied in order to conduct the regression analysis were thus checked. The results show that although all the variables are not normally distributed, the distributions are not bimodal nor U distributions and are mostly asymmetrically shaped. Furthermore, the unexplained part of the criterion variance (residuals) is distributed normally. The Durbin-Watson test is close to 2 (1.771), i.e., it does not indicate the existence of multicollinearity, and the same is confirmed with VIF factors smaller than 4 (in a range from 1.000 to 2.999).

Table 2 presents the results of the regression analysis regarding the regression coefficient of $R = 0.541$, i.e., 29.2% of the explained self-confidence variance based on the introduced predictors.

Table 2: Contribution of support and enthusiasm in explaining student self-confidence in mathematics

	ΔR^2	β	*t*	*p*
1				
gender		-.209	-3.910	.001
grade (age)		-.374	-6.992	.000
$R = 0.43$; $R^2 = 0.18$; Adjusted $R^2 = 0.18$; $\Delta F(2/287) = 31.61$; $p < 0.001$				
2	.11**			
support		.353	4.087	.000
enthusiasm		.157	2.431	.016
$R = 0.54$; $R^2 = 0.29$; Adjusted $R^2 = 0.28$; $\Delta F(2/285) = 22.49$; $p < 0.001$				

R – multiple coefficients of correlation; R^2- multiple coefficients of determination; ΔR^2 - change in the coefficient of multiple determination; * $p < 0.05$; ** $p < 0.01$.

In the first step, the demographic factors explain 18.1% of the students' self-confidence variance, where both predictors are significant, with age, i.e., grade, as the more significant predictor ($\beta = -.374$; $t = -6.992$; $p < 0.01$).

Correlation analyses show that self-confidence decreases with age (r = -0.37; N = 290; $p < 0.01$), and the testing of differences reveals greater self-confidence in boys than in girls (t = 3.50; df = 288; $p < 0.01$). Additional analyses indicate that the grade (age) explains 13.8% and gender 4.3% of the self-confidence variance. Support and enthusiasm were introduced into the analysis at the second step, and so the percentage of the explained self-confidence variable is 11.1% higher and is now 29.2% (R = 0.541). The increase in the explained variance percentage is statistically significant (F = 22.492; $p < 0.001$). Support is a more significant predictor (β = .353; t = 4.087; $p < 0.01$) than enthusiasm (β = .157; t = 2.431; $p < 0.02$); however, both variables have a statistically significant independent contribution to student self-confidence.

Support (r = 0.49; N = 290; $p < 0.01$) and enthusiasm (r = 0.39; N = 290; $p < 0.01$) are positively correlated with self-confidence, i.e., the students' self-confidence grows with an increase in support and enthusiasm. Additional analyses show that with this step, the portion of the variance explained by the variables from the first step of the regression analysis decreases; here support thus explains 17.2% and enthusiasm 6.2% of the self-confidence variance. In line with the set hypothesis, teachers' support and enthusiasm were proven to be predictors of student self-confidence.

Such a result could have been foreseen because empathic and positive teachers nurture self-confidence in their students by trying to understand them, providing them with help when needed and believing in the possibility of progress for each student. Klem and Connell (2004) have determined that teacher support does not have an equal effect on younger and older students: low teacher support has a more negative effect on younger students, while older students have more benefits from high levels of teacher support. Therefore, it would be advisable to pay special attention to providing adequate support to students during the early years of schooling.

The implemented hierarchical regression analysis examined the contribution of the demographic variables and the teachers' support and enthusiasm to anticipating mathematics anxiety in two basic steps. The students' demographic variables were introduced (age and gender) in the first step and teacher support and enthusiasm in the second. Before the regression analysis was conducted, the correlations between the variables were checked, and it was determined that all the correlations were moderate but significant, with 1% risk.

Not all the variables are distributed normally, but the distributions are neither bimodal nor U distributions and are mostly symmetrically shaped. Furthermore, the unexplained part of the criterion variance (residuals) is distributed normally. The Durbin-Watson test was close to 2 (1.726), i.e., it does not indicate the existence of multicollinearity, and the same is verified by the VIF factors lower than 4 (in range from 1.000 to 2.994).

Table 3 presents the results of the regression analysis regarding the regression coefficient of $R = 0.547$, i.e., about 29.9% of the explained mathematics anxiety variance based on the introduced predictors.

Table 3: Contribution of support and enthusiasm in explaining mathematics anxiety

	ΔR^2	β	*t*	*p*
1				
gender		.09	1.73	.084
grade (age)		.48	9.23	.000
$R = 0.484$; $R^2 = 0.235$; Adjusted $R^2 = 0.229$; $\Delta F(2/286) = 43.830$; $p < 0.001$				
2	.064**			
support		-.29	-3.35	.001
enthusiasm		-.10	-1.60	.111
$R = 0.547$; $R^2 = 0.299$; Adjusted $R^2 = 0.290$; $\Delta F(2/284) = 13.146$; $p < 0.001$				

R – coefficient of multiple correlation; R^2- coefficient of multiple determination; ΔR^2 - change in the coefficient of multiple determination; * $p < 0.05$; ** $p < 0.01$.

The first regression analysis step shows that demographic factors explain 23.5% of mathematics anxiety variance, while only grade (age) is a statistically significant, independent predictor ($\beta = .478$; $t = 9.233$; $p < 0.01$). Correlational analyses indicate that mathematics anxiety increases with age ($r = 0.48$; $N = 289$; $p < 0.01$). Additional analyses show that the grade explains 22.7% of mathematics anxiety variance. Support and enthusiasm were introduced into the analysis at the second step, increasing the percentage of the explained self-confidence variance by 6.4%, which is now 29.9% ($R = 0.547$). The rise of the explained variance percentage is statistically significant ($F = 13.146$; $p < 0.001$). Support is a statistically significant predictor ($\beta = -.288$; $t = -3.346$; $p < 0.01$), while enthusiasm has no independent contribution to explaining the fear of mathematics ($\beta = -.103$; $t = 1.599$; $p > 0.05$).

Support (r = -0.52; N = 289; p < 0.01) and enthusiasm (r = -0.38; N = 289; p < 0.01) are negatively correlated to mathematics anxiety, i.e., the fear of mathematics decreases with an increase in support and enthusiasm. Additional analyses show that this step decreases the portion of the variance explained by the variables from the first step of the regression analysis, where support explains 14.9% and enthusiasm 3.9% of mathematics anxiety variance.

It is not surprising that mathematics fear increases with age. Students who struggle with mathematics early in school normally develop an aversion towards the subject (Mathai, 2014, p. 189, acc. to Davadas and Lay, 2020). Over the course of time, students are likely to have had negative experiences in maths classes, so we can assume that precise, timely support from the teacher could have eased their fear. According to the students' assessments, younger students receive more support than older students (Klem and Connell, 2004), and the level of support should not decrease if we consider the results of this study. By researching the attitude towards mathematics in Romanian students (10/11 to 14/15 years old, N = 337), Marchis (2011) concluded that the most significant factor was the teacher: the teacher's attitude towards mathematics and the amount of self-confidence and support he/she provides for the students influence their attitudes toward mathematics. The findings from a study by Katz et al. (2009) in two Israeli schools suggest that when it comes to their pronounced needs, students at different levels can perceive various tiers of teacher support and that teacher support could be more important for students who express a higher needs level. The fear of mathematics can be lessened by providing efficient support, but it needs to be provided in due time, continuously and with undiminished intensity.

Conclusions

In this study we aimed to examine the contribution of teachers' support and enthusiasm to explaining self-confidence and mathematics anxiety in primary-school students. According to our results, we can infer that the variables regarding students (*confidence* and *anxiety*) are given lower evaluations than those pertaining to the teachers (*support* and *enthusiasm*). Teacher support has proven to be a statistically significant predictor of students' self-confidence and mathematics anxiety, whereas enthusiasm makes an independent contribution to explaining student self-confidence.

The findings of this study show the importance of teachers in the students' perception of mathematics self-confidence and fear of mathematics. In designing the programme for teacher education and programmes of permanent education, the role of teacher support in realising the planned learning outcomes should be taken into consideration, not only academic outcomes but also social ones. The results could, furthermore, represent a starting point for future research to explore additional variables as well (besides teacher support and enthusiasm), in order to finally create a more incentivised educational environment for all students.

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