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HOPE, TEST ANXIETY AND SCHOOL SUCCESS

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Summary *– The aim of this work is to investigate the relationship between hope, test anxiety and school success with fifth graders. The research comprised 167 students (83 girls and 94 boys) attending the fifth grade of two primary schools in the town of Velika Gorica. Two instruments were used: the children's hope scale (Snyder et al., 1997) and the children's fear of school/ test anxiety questionnaire IDSOŠ (Arambašić & Krizmanić, 1986). Results have shown no difference in the level of hope and fear of school between boys and girls. However, girls had a better overall grade point average as well as math and Croatian language grades. Gender was a significant predictor of all three variables of school success. With a controlled gender variable, hope was a significant predictor of the math and Croatian language grades, with the contribution of hope showing to be more significant in math grades. Test anxiety, combined with hope, was not a significant predictor of any criterion of school success. The results of the research indicate that prevention programs for children and youth in Croatian schools could include hope development programs.*

Key words*: hope, test anxiety, school success*

INTRODUCTION

Snyder and his associates (Snyder, Harris et al., 1991) conceptualized hope as a cognitive process of goal orientation which includes two components: thoughts about pathways leading to the desired goal and thoughts about one's own capacity to use these pathways.

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Thoughts about the pathways reflect a person's capacity to produce various ways to achieve a goal (Snyder, 1994). Basically, such thinking involves creating plans to reach a goal. Persons with a high degree of hope usually have a greater variety of plans so as to successfully face possible obstacles on the way to their goals. Of course just knowing how to accomplish a goal is not enough. One has to head for its accomplishment. In order for these planned ways to lead to a goal, the component of hope is necessary, which includes thoughts about one's own capacity to use these pathways. They are thoughts about the capacities we possess to take a chosen way and stay on it, and through such thoughts we stay motivated to do so (Snyder et al., 1999). To put it simply, a person has hope when he/she knows what he/she wants, when he/she can devise the means to achieve it and finds the drive to make it happen.

Although hope has two components, they are necessarily functionally connected. A person can think of a great number of ways to reach a goal, but will not accomplish it unless he/she is motivated enough to take any of those ways and persists to the end. Besides, however strongly the person is motivated to accomplish a goal, he/she will not make it happen unless he/she can think of ways that will lead to it.

The role of hope was mainly investigated in the area of physical (Irving et al., 1998; Snyder, 1996, 1998; Snyder et al., 1991) and mental health (Snyder et al., 1996; Snyder, Harris et al., 1991; Kwon, 2000; Chang & DeSimone, 2001), where connections with different positive results were obtained.

What is the role of hope in academic achievement? To date there have been only a few investigations showing a positive correlation between hope and school success in primary school (Snyder et al., 1997), secondary school (Snyder, Harris et al., 1991) and higher education (Curry et al.,. 1997; Chang, 1998). Also, during a six-year period, university students with a higher degree of hope had a better grade point average, graduated more quickly and had a lower dropout rate (Snyder et al., 2002).

Research has shown a negative correlation between test anxiety and school success (Lufi et al., 2004; McDonald, 2001). Moreover, students with a high level of test anxiety have been proved to use poor or less adequate learning strategies which can result in poor academic results (Benjamin et al., 1981; in Arambašić, 1988).

It is interesting to mention that the connection between hope and test anxiety has not been investigated to date, although it could be expected that students with a higher level of hope will have lower test anxiety. Test anxiety is usually defined as emotional arousal and cognitive nervousness appearing in exam situations and/or when imagining or anticipating such situations. The cognitive component of test anxiety is characterized by distracting thoughts which are not related to the task, intense fear of failure, fear to disappoint others and negative comparison with other students. Since hope includes thoughts of pathways leading to

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a goal and thoughts about one's own capacity to use these pathways, they might prevent the development of test anxiety. That is why the aim of this investigation is to look into the relationship between hope, test anxiety and school success with students attending the fifth grade of primary school.

THE METHOD

The Sample

The research comprised 167 students (83 girls and 94 boys) attending the fifth grade of two primary schools in the town of Velika Gorica.

The Procedure

The respondents were presented with questions in groups during their regular school classes. The investigation was carried out by well-trained examiners. One was reading the questions while the other was assisting the students who had difficulty in answering individual questions or could not keep pace with the work.

The Instruments

a. The children's hope scale CHS, (Snyder et al., 1997.) - translated from English. The scale consists of six statements. On a scale of six the children have to pick how frequently the statement described in the scale applies to them. An example of a statement:

I think I am doing pretty well.

None of the time	A little of the time	Some of the time	A lot of the time	Most of the time	All of the time

Since the scale has not been used in Croatia to date, a factor analysis was performed in order to check the two-factor structure of the instrument (the self-perception that one can produce routes to desired goals and the motivation to use those goals). The factor analysis results by the method of main components have shown the existence of only one factor. Thus, our research can include only one general hope factor. The characteristic root is 2.47 whereas the percentage of the explained variance is 41.27. The reliability coefficient is satisfactory (the Cronbach alpha coefficient is .70).

b. The children's fear of school/ test anxiety questionnaire, IDSOŠ (Arambašić i& Krizmanić, 1986).

The questionnaire consists of 28 statements to be answered by the students with YES or NO. An example of a statement: *When learning to read a text at home, are you afraid you will still not be able to read it fluently in class?*

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The reliability of the questionnaire in our research is high (Cronbach alpha is .82).

RESULTS

Descriptive statistics

Ahead of the data processing it was verified whether the results of the tested variables show normal distribution. Table 1 shows the main statistic parameters and the results of normality distribution tests by means of the Kolmogorov-Smirnov (K-S) test of normality of distribution.

Table 1. Range of results, arithmetic mean and standard deviation for the observed variables plus values obtained with the Kolmogorov-Smirnov test for testing normality distribution

variable	Min	Max	M	SD	K-S test	p
Hope	2	5.83	4.32	.86	.903	.389
Test anxiety	3	27	11.43	5.21	1.194	.115
Grade point average	3	5	4.56	.57	4.86	.000
Croatian language	2	5	4.42	.73	4.36	.000
Maths	2	5	4.25	.83	3.76	.000

The results of the Kolmogorov-Smirnov test show that the results distributions of the variables hope and test anxiety do not differ significantly from normal distribution, whereas the distributions of all variables of school success differ significantly from normal. For this reason, the results were processed by means of parametric and non-parametric methods.

Gender differences

A t-test was used to test the differences between boys and girls in hope and test anxiety, whereas the Mann-Whitney non-parametric test was used to test the differences in the grade point average, maths and Croatian language grades.

Table 2. Gender differences regarding test anxiety and hope

	boys		girls		t-test	P
	M	σ	M	σ		
Hope	4.20	.91	4.42	.80	1.71	.089
Test anxiety	11.73	5.41	11.10	5.00	.78	.436

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Table 3. Gender differences in grade point average, maths grades and Croatian language grades

		Mean rank	Rank sum	Mann Whitney	Z	P
Grade point average	boys	70.53	5924.50	2354.50	- 4,20	.000
	girls	97.63	8103.50			
Croatian language	boys	70.24	5900.00	2330.00	- 4,14	.000
	girls	97.93	8128.00			
Maths	boys	74.73	6277.00	2707.00	- 2,69	.007
	girls	93.39	7751.00			

As can be seen from Tables 2 and 3, boys and girls do not differ significantly in the level of hope (t=1.71; p=.098) and test anxiety (t = .78; p = .436) they display. However, there are significant differences regarding school success. Girls have a higher grade point average (Z = - 4.20; p=.000) and better grades in Croatian ((Z = - 4,14; p = .000) and maths (Z = 2.69; p = .007).

Relationship between hope, test anxiety and school success

Table 4. Spearman's correlation coefficients between hope, test anxiety and school success

	Hope	Test anxiety	Grade point average	Maths	Croatian language
Hope	1.000	-.427**	.223**	.227**	.221**
Test anxiety	-.427**	1.000	-.189*	-.176*	-.200**
Grade pint average	.223**	-.189*	1.000	.673**	.663**
Maths	.227**	-.176*	.673**	1.000	.634**
Croatian language	.221**	-.200**	.663**	.634**	1.000

** P<.01; P<.05

As can be seen from Table 4, students with a higher level of hope have a higher grade point average, as well as better grades in maths and Croatian language. On the other hand, there is a negative correlation between test anxiety and both hope and the grade point average, math and Croatian grades.

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Predictors of school success

In order to investigate which variables of this research are significant predictors of school success, and maths and Croatian grades, three logistic regression analyses were carried out. Due to the significant deviation from normal distribution, the criterion variables (grade point average, math and Croatian grades) were dichotomized and recoded into two values (good and very good = 0; excellent = 1).

Grade point average

Firstly, the gender of the examinees was entered as a predictor variable, whereas the next step was to enter hope and test anxiety. The results of the logistic regression are presented in Table 5.

Table 5. Predictors of school success (logistic regression)

variable	Coefficient B	Standard error	Exp (B)	Wald-ov $\chi 2$	p
gender	1.25	.34	3.75	13.55	.000
R2 (Nagelkerke)		.127			
% explained variance		12,7%			

Gender showed to be a significant predictor variable. Girls are more probable to achieve excellent school success than boys. Gender explains 12.7% of the school success variance.

The variables of test anxiety and hope did not contribute significantly to the explanation of the school success variance.

Croatian language grades

First, the gender of the examinees was entered as a predictor variable, and in the next step hope and test anxiety were entered. The results of the logistic regression are presented in Table 6.

Table 6. Predictors of Croatian language grades (logistic regression)
Step 1

variable	Coefficient B	Stadard error	Exp (B)	Wald-ov $\chi 2$	p
gender	1.33	.33	3.79	16.41	.0001
R2 (Nagelkerke)		.130			
% explained variance		13%			

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Step 2

variable	Coefficient B	Standard error	Exp (B)	Wald-ov $\chi 2$	p
gender	1.27	.33	3.57	14.30	.0002
hope	.43	.22	1.53	3.69	.0500
test anxiety	-.03	.03	.97	.67	.41
R2 (Nagelkerke)	.183				
% explained variance	18.3%				

Gender showed as a significant predictor variable. There is a greater probability for girls to achieve excellent grades in Croatian language than for boys. Gender explains 13% of the school success variance.

In step 2, only hope showed to be a significant predictor. There is a greater probability for students who showed a higher level of hope to achieve excellent grades in Croatian. By entering hope and test anxiety, the percentage of explained variance has risen to 18.3%.

Maths grades

First, the gender of the examinees was entered as a predictor variable, and in the next step hope and test anxiety were entered. The results of the logistic regression are presented in Table 7.

Table 7. Predictors of maths grades (logistic regression)

Step 1

variable	Coefficient B	Standard error	Exp (B)	Wald-ov $\chi 2$	p
gender	.75	.31	2.12	5.68	.017
R2 (Nagelkerke)	.040				
% explained variance	4 %				

Step 2

variable	Coefficient B	Standard error	Exp (B)	Wald-ov $\chi 2$	p
gender	.67	.33	1.95	4.15	.0415
hope	.47	.22	1.53	4.80	.0285
Test anxiety	-.05	.04	.95	1.83	.1754
R2 (Nagelkerke)	.130				
% explained variance	13%				

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Gender showed to be a significant predictor variable, but to a lesser extent than in the grade point average and in the Croatian grades. There is a greater probability for girls to achieve excellent grades in maths than for boys. However, gender explains only 4% of the school success variance.

In Step 2, between hope and test anxiety only hope showed to be a significant predictor. There is a greater probability for students who showed a higher level of hope to achieve excellent grades in maths. By entering hope and test anxiety, the percentage of explained variance has risen to 13%.

DISCUSSION

The factor analysis of the hope questionnaire resulted in one factor with a characteristic root higher than one. Thus, this investigation has not confirmed the two-factor structure of the questionnaire obtained by its authors (Snyder et al., 1997). Only one general factor of hope was identified in our sample of primary school students attending the fifth grade. The reliability coefficient is satisfactory (.70), and has a slightly lower value than the values given by the authors for their samples (between .72 and .86).

No significant statistical differences were established between boys and girls for the variables of hope and test anxiety. Gender differences regarding hope were not established in previous investigations neither in adult examinees ((Snyder, Harris et al., 1991) nor in children (Snyder et al., 1996). A possible explanation is that there are no gender differences regarding this feature, but boys and girls may set different aims, which they "consider appropriate" for their gender.

To date, similar research on fear in exam situations established that test anxiety is more frequently observed in girls than in boys (Hill & Eaton, 1977; Sarason 1980; Arambašić, 1988; Zeidner, 1990; Vulić-Prtorić, 1992). Our research, however, did not back this up. Several investigations on exam anxiety carried out in Croatia did not display gender differences on a sample of primary school children (Arambašić & Krizmanić, 1986; Kolić-Vehovec, 1993; Šepić & Kolić-Vehovec, 1999-2000).

In this research, girls achieved a significantly better grade point average as well as maths and Croatian language grades. This is consistent with several other investigations in Croatia and abroad ((Bezinović, 1992; Fergusson & Horwood, 1997; Matešić, 2004) and is attributed to the fact that girls are more successful in tasks requiring concentration and planning (Warrick i Naglieri, 1993).

The gender variable is the only one to contribute to the explanation of school success in general, whereas the variables of hope and test anxiety are not significant predictors. In the case of maths and Croatian language grades the hope appears as a significant variable. Although hope did not show to be a significant predictor of academic success, the results of some investigations show a positive correlation between hope and school success in primary school (Snyder et al.,

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1997). In an investigation conducted by Gillman and Dooley (2006) adolescents with a high level of hope had a higher grade point average than those with a low level of hope. However, even though hope did not show to be a significant predictor of general school success in our research, it was a significant predictor of maths and Croatian language grades.

Moreover, it has to be pointed out that gender is a significantly weaker predictor regarding maths grades than regarding the grade point average and Croatian language grades. This is probably due to the fact that maths is more difficult for students (which is visible from their lower average grades), and this possibly makes hope a more significant factor. If a task is more difficult, hope may become more significant for achieving success.

If a student has a high level of hope, his/her success expectations grow, and along with it the probability that success will be achieved also grows. On the other hand, if a student expects failure, the probability for failure to occur also increases (Snyder, 2000; Snyder, Rand et al., 2002). Still, it has to be emphasized that the correlations between the hope level and school success are relatively low. A higher correlation could probably be obtained between the hope level and academic test results, but this hypothesis still remains to be verified.

Test anxiety, combined with hope, has shown to be a significant predictor of school success. Part of this explanation lies in the negative correlation between hope and test anxiety. In other words, since low results in the test anxiety questionnaire were related to high results in the hope scale, which in turn were a significant predictor of school success, test anxiety may be of less importance for school success than the general hopeful pathways. Such a negative correlation is consistent with the research to date (Snyder, 1999; Onwuegbuzie, 1998). It is supposed that a negative self-image can be the cause of a higher level of test anxiety in students with a lower level of hope, since such thoughts distract their attention from test tasks and increase anxiety (Onwuegbuzie & Snyder, 2000). Besides, research has shown that in situations of failure persons with a low level of hope do not use feedback which could help them avoid such situations in future. Instead, they are constantly concerned with negative thinking which, in turn, results in self-doubt (Snyder, 1999; Michael 2000), encourages aggressiveness (Collins & Bell, 1997) and prolongs stress (Greenberg, 1995).

For a student to get a good grade he/she has to think and plan various pathways to achieve that goal. They include learning from textbooks, attending classes regularly, homework, taking notes, looking for information in sources other than textbooks, cooperating with peers and others. If a student gets a bad grade he/she should consider alternative pathways – such as asking friends for help or tutoring. However, thinking alone will not bring him/her to the desired goal if it is not accompanied by motivation and thoughts like “I know I can do it if I try hard enough”. On the other hand, thoughts like “This is too hard for me” can lead to a feeling of hopelessness and giving up too soon.

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To date, programs around the world have focused on teaching children how to set clear goals and find various pathways to achieve them. After this, they would learn how to develop motivation to use those pathways and make those goals happen (for an overview of programs see McDermott & Snyder, 2000). This research points at a degree of positive correlation between hope and school success and a possible positive influence of hope on reducing test anxiety. It suggests including hope programs as part of prevention programs for children and youths in Croatian schools.

To conclude, some limitations of this research have to be mentioned. The research could only establish the correlation between the mentioned variables but not a cause-effect relationship. Hope may have a positive influence on school success and the reduction of test anxiety. However, the reverse is also possible. Better school success and lower test anxiety can contribute to hopeful thinking in students. After all, it is possibly a reciprocal influence.

Also, the factor analysis of the hope questionnaire was carried out in a satisfactory way but on a relatively small sample. A larger sample could have shown the two-factor structure mentioned by the authors of the questionnaire. Besides, gender proved to be the best predictor of general academic achievement and Croatian language grades. Hope had a more significant role only in maths grades but even here the percentage of explained variance after the gender variable had been checked was as high as 9%. In order to verify the results regarding the correlation between hope and school success an investigation on a larger sample should be carried out. Moreover, besides school grades, knowledge tests should be included as a criterion, and it would be good to include the variable of task difficulty.

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