LEARNING STRATEGIES IN HIGH SCHOOL STUDENTS - DIFFERENCES WITH RESPECT TO AGE AND TYPE OF SECONDARY SCHOOL

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ABSTRACT

The aim of this study was to determine the level of development of learning strategies in high school students with respect to the age of students and type of high school they attend. We tried to answer the question of whether the years spent in school educate students to strategic approach to learning. The study sample consisted of students of the first and third grade students from three high schools in Tuzla, which are: Gymnasium "Mesa Selimović", Secondary Commercial School and students of apprenticeships from the Mixed Secondary Technical School, a total of 731 students. Instruments used in this research are Scaler Learning Strategies (SUS) from 2009, by Nenad Suzić. The results showed that 85% of students while learning do not to use any strategy, and that first-grade students had a significantly higher level of development of learning strategies in relation to students of the third grade. This data is not encouraging and tells us that schools put little work into educating students to strategic approach to learning. The study found that answers of students with regard to the type of high school differ significantly on the general score of the SUS-scaler and all its subtests. Based on the arithmetic mean heights, it was found that students of apprenticeships achieved significantly lower values on the general score of the SUS-scaler compared to students of Gymnasium and Secondary Commercial School.
Key words: *learning strategies, high school students, learning to learn, type of high school.*

INTRODUCTION

We live in a time where in every moment in every sphere of life new discoveries, inventions and ideas are made. Rapid scientific, technological and social development gives us challenges that require new knowledge, skills and abilities. Intense changes aimed at increasing the role of the new skills and knowledge, they see the learning process and the ability of each individual to promote and oversee this process as the central problem. Toffler (1970; according to Suzić, 2012) notes that illiterate people in future will not be those who cannot write, but those who do not know how to learn. So, it is no surprise that the documents of the European Commission (EC, 2007) exactly mentioned learning to learn as an extremely important competence which guarantees every person "survival" in the world of profound changes and the everyday flow of information. Learning to learn is defined as the ability to continue and persist in learning, to individually and in groups organize their own learning, and to effectively manage time and information. This capability includes an awareness of their own learning process and educational needs, available resources and grants, and also the obstacles and strategies to overcome them (Education Council, 2006).

Arrival at school puts before the child a whole range of new challenges, where learning becomes the main task. However, learning is not a natural and easy process for every child. There is not a small number of students who have learning difficulties. Does the core of the problem in this case lie in the inadequate choosing of learning strategies? This is an extremely important issue to which we will try to answer in the further elaboration of the problem.

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Faced with unlimited multiplication, learning does not to resist to crises which seriously burden it today (Šehović, 2012). For centuries, it was identified as the acquisition of knowledge. However, knowledge is accumulating faster and more dynamic than capacities of learning increase. Therefore, the main obligation of school, as pointed out by Bakovljev (1998), is no longer to supply the students a greater amount of knowledge, but to permanently interested and thoroughly educate for lifelong independent learning. In this respect, the school occupies an important place in the education of students to strategic approach to learning, with a plan and clearly defined learning objectives. The culture of learning and capacity to learn is a permanent value to strive for. Teachers have to encourage strategic learning, and organizing their work based on paradigm settings oriented to the learning process, but not only on the content of learning. This interpretation has served as basis for the formulation of our research hypothesis that the years spent in school contribute to the development of strategic learning in students.

THEORETICAL BASIS OF RESEARCH

The concept and importance of learning strategies

Cognitive learning theory has prompted numerous studies which clearly recognized the active role that students have in the learning process (Zimmerman, 2002). Within these tendencies a large number of researchers focused on exploring learning strategies, which are assumed to play a key role in successful learning. In the overall process of learning is of particular important to learn how to learn. When confronted with an abundance of content, student who is ignorant of effective learning begins to learn by focusing on his memory, and immediately after begins to memorize all of it. It is an almost sure path of his teaching to become "torture" (Suzić, 2005). Instead of this approach, it is possible to strategic approach to learning, separating, for example, the important from the unimportant, to make notes to remember just the key information or structure of the material, to use different sources when working on a task, etc. Therefore, it is expected from the modern school that students develop a strategic approach to learning, but also to develop a positive attitude towards learning. Effective learning involves the use of different learning strategies. Freeman (Freeman, 1992) perceived learning strategies as an integrated sequence of actions selected in accordance with the intended objective. Wenden and Rubin (Wenden & Rubin, 1987) defined learning strategies as techniques that students apply to acquire knowledge. Richards and Plat (Richards & Platt, 1992) interpreted them as a deliberate forms of behavior and thinking that students apply during learning, so they could learn, understand and remember new information better. A very comprehensive definition of learning strategies offers us Oxford (Oxford, 1990), defining learning strategies as operations used by students to facilitate themselves the acquisition, storage or retrieval of information, or as specific actions taken by students to make learning easier, faster, more fun, more efficient, more controllable, and more transferable. It is therefore extremely important that students understand that the strategies and techniques of learning need to be learned, developed and improved, like any other activity that they will use in their life. Meyer (Meyer, 2005) points out those learning strategies are used for developing (elaboration), reducing and simplifying the teaching material. Learning strategies can help students that their achieved results are in line with their invested time, energy and patience, and that they learn with ease and pleasure, while at the same time achieving results. According to Ormrod (2011) strategic learning in students can range from taking notes during learning, through summarizing and organization of new information, to the creation of the right environment for learning.

The consequence of the enormous scientific and technological progress and the everyday flow of information from different spheres of life and work, among other things are also too extensive curricula in schools at all levels of education. When confronted with an abundance of information and content that must be adopted, the first thing students have to carry out is the selection of key information which they will process. They should also assess what is the priority objective and which learning methods should be used, with whom and how to cooperate, to carry out their own structure of work content, to choose what is necessary to memorize, to apply the techniques of memorizing and to evaluate finished tasks. An important assumption for successful learning is exactly learning strategies (Dumford, Cogswell & Miller, 2016). Although learning is the result of personal effort of every individual, teachers can teach students how to learn (Mirkov and Opačić, 1997). To achieve savings of time and energy for deeper consideration of new ideas with which the student is confronted while learning, it is necessary that the strategies are well-trained, so that they become automated and well organized, which includes training for their correct choice in a given situation.

Learning strategies, therefore, contribute to the regulation and monitoring of time for learning, concentration and a better understanding of the learning content (Dumford, Cogswell & Miller, 2016). In choosing the content of learning, students apply strategic learning to sort out the most important thigs and deal with them, not wasting time dealing with small things and details. Unlike profound learning, they strategic link intentions or goals with the contents and teaching methods. If one method fails, a strategic approach is to search for an alternative. A research (Winne and Perry, 1999) has shown that students who use strategic learning achieved metacognitive control over the learning process and were effectively changing methods and tactics while working on tasks. Metacognition, as awareness of own learning and thinking, sometimes stands out as the most effective strategy in learning (Mirkov, 2005). Given that metacognition is sophisticated and is not always developed spontaneously, there is a need to take this ability for a general insight, planning and awareness in the learning process systematically developed in school. Beliefs of an individual about himself and his own learning affect the learning process (Vrkić and Vlahovic Štetić, 2013). In order to enhance learning, according to Freeman (Freeman, 1992), metacognitive behavior are useful, such as organizing information (extract central ideas and gathering additional information around them which give them their meaning), connecting new material to prior knowledge, checking their own understanding and controlling their own learning process, developing alternative strategies for solving problems and connecting of interpretation of a problem with general scientific principles. Mirkov (2006) points out that most students have enough knowledge of learning strategies. Students often think that it is enough to re-read and repeat material. They learn by heart, intentionally, because they know that they can get good grades just by memorizing. First, insufficient prior knowledge or understanding of matter, adversely affect the ability to regulate cognitive processes, that is finding appropriate and effective learning strategies, due to the inability to grasp which ideas are important in the text they are reading, incomplete knowledge of the phenomena and poor understanding of the material. Second, students who adversely assess their own ability are using less effective learning strategies to learn, not only because of real intellectual disabilities, which can be objective, but also because of the uncertainty in themselves. They therefore rely on lower cognitive processes, such as storing, identifying and the like.

Most studies (Gredler, 1992; Stojaković, 1985 to Stojaković, 2006) suggest that students who achieve better results at school are usually using and applying the following strategies and processes of learning: they are connecting prior knowledge with new learned material in order to better understand and understanding new learned material; they tend to constantly question themselves about why something is learned, where and how it can be applied, etc.; they often pause in the process of learning and reading text to make themselves sure they understand the content they have learned; they are trying to find new examples for a better explanation of concepts and ideas discussed in the learning material and they do not remain only at the example given in textbooks; they are prone and they tend to have a greater tendency to critically evaluate what they read (they like to discuss and verify what was given in the text) and they make more detailed notes about the main concepts and ideas in the text (Stojaković, 2006, pages 22, 23).

Teaching should be more infused with contents for educating students for independent learning which is regulated by modern principles of teaching (Muminović, 2000). With years spent in school, students should receive rounded up units in the field of education for strategic learning. Teaching learning strategies influence the formation of realistic expectations among students regarding competence for learning, by reducing the fear of failure and stimulate motivation for learning. In the process of teaching, students should be mobilized and educated to use effective and efficient learning strategies. Learning strategies are usually related to needs and interests of students in order to improve learning and are based on different learning styles (Ekwensi, Moranski and Townsend-Sweet, 2006). The ability to analyze their own thinking process is an essential condition for the adoption of effective learning strategies. Teachers can do much to help their students to get to know their cognitive and learning styles to form a more adequate picture of themselves and their abilities and personality traits. All this points are a necessity with dealing with more detailed and systematic development of a strategic approach to learning in school.

METHODS

The aim of this research was to examine the level of development of learning strategies of high school students considering the class they are attending and the type of high school.

In this study, we started from three hypotheses:

1. High school students will demonstrate a high level of development of learning strategies which they apply in the classroom and in work learning material.
2. Third grade students will show a higher level of development of learning strategies in relation to first grade students.
3. Gymnasium students and Secondary Commercial School students will demonstrate a higher level of development of learning strategies in relation to students of apprenticeships.

Sample

The sample of this study consisted of thirty students classes (five first grade classes of and five third grade classes) from three secondary schools in the Tuzla, namely: students of Gymnasium "Mesa Selimović" (264 students), students of Secondary Commercial School (240 students) and students of apprenticeships from the Mixed secondary technical school (227 students). The study included 370 students of the first grade and 361 students of third grade. The size of the sample was calculated using G * POWER 3 program, where with the heterogeneity of 0.70 and a possible sampling error of 5% we received information that the minimum number of units in our sample must be 613 respondents. As our sample is larger and amounts to 731 respondents, we can conclude that the sample of respondents can be considered representative for the area of the basic set (population).

The results of the chi-square matching test show uniformity of the sample according to the type of high school ($\chi 2 = 2.89$, df = 2, p = 0.24) and the school grade ($\chi 2 = 0.11$, df = 1, p = 0 , 74), which gives us the right to perform certain generalizations.

Instrument

The instrument used in this study is Scaler of learning strategies (SUS scaler) (Suzić, 2009) which measures the development of learning strategies that students apply in the classroom and in work with learning material. In essence of the instrument lies a five-point Likert scale with 55 statements which corresponds to the scale 1 = not at all, never; 2 = a little, sometimes; 3 = medium, half and half; 4 = mainly, often and 5 = completely, always. Questions in this instrument are arranged in the following subtests: a) notes, b) sources of learning, c) planning of learning, d) quality reading and e) effective memorizing, which represent learning strategies.

For this instrument, we have done calibration on our sample. Table 1 shows the results achieved in our sample compared to the results of original calibrations.

Table 1. Results of calibration of SUS-scaler

Scaler of learning strategies	Alpha-Cronbach (α) original calibration	Alpha-Cronbach (α) our calibration
1. Notes	0,64	0,84
2. Sources of learning	0,74	0,86
3. Planning of learning	0,53	0,57
4. Quality reading	0,57	0,73
5. Effective memorizing	0,55	0,75
SUS – general score	0,86	0,92

As it can be seen in Table 1, the instrument shows a high internal consistency, whose Alpha Cronbach reliability coefficient is α = 0.92. The homogeneity of this instrument is 0.72, and Kaiser, Mayer, Olkin (KMO) measure of representativeness has a high value of 0.93. This scaler is designed to recognize the practice and study habits that students apply every day.

Method of realization of research

The research was conducted in three secondary schools in Tuzla, on a sample of 731 students. The students were informed that the survey is anonymous, and that the results will be used exclusively for research purposes.

During the examination, the examiner was in direct contact with the respondents, so that the respondents had the opportunity to ask questions and seek explanations. To process the data obtained by instruments, SPSS 16 (Statistical Package of Social Sciences-for Windows) and G * Power 3 software were used, while for calculating the metric characteristics of the instruments we used SPSS macro rtt9s. Normalization and standardization of results was carried out with the help of SPSS's macro "Normalize".

RESULTS AND DISCUSION

The level of development of learning strategies

The research started from the assumption that high school students will show a high level of development of learning strategies. Since the Scaler of learning strategy which was used is a not standardized instrument, no external benchmarks could be applied in the research. Therefore, in order to give answers to the question of development of strategic learning in high school students, we analyzed the distribution of scores in individual subtests that measure learning strategies. The theoretical range of scores for the entire instrument is distributed between 55 (underdevelopment learning strategies) and 275 (maximum development of learning strategies). Assessment of the level of development of learning strategies was carried out using the distribution of achieved scores of subjects on which the instrument is applied to. Basic descriptive indicators are provided in Table 2.

Table 2: Descriptive statistics for individual learning strategies

	Number of respondents	Arithmetic mean	Standard deviation	Min	Max
Notes	731	58,78	11,56	16	80
Sources of learning	731	58,52	13,29	19	95
Planning of learning	731	25,29	5,71	8	40
Quality reading	731	18,31	4,63	5	25
Effective memorizing	731	25,27	5,84	7	35
SUS score	731	186,17	32,65	55	275

Key: N - number of respondents; M - arithmetic mean; SD - standard deviation; Min - the minimum value; Max - maximum value

Descriptive indicators in Table 2 indicate that the average value of the SUS-scaler and all its subtests are slightly above the theoretical average score that could be expected. However, in order to give precise answers to the question of how high school students strategic approach to learning materials, based on the obtained arithmetic means and standard deviations, we performed categorizing respondents into those who do not use learning strategies and those that strategic approach to learning materials. The criterion that was used for such cut off categorization was one standard deviation from the average results. In this way, we received information that out of the total number of respondents (N = 731), 621 of them (84.9%) falls into the category of students which do not use learning strategies while working on learning materials, while 110 students (15.1%) use strategic approach to learning. Based on these results we conclude that we cannot accept the first hypothesis of our research.

This data is not very encouraging and it tells us that it is very little done in schools in terms of educating students to strategic approach to learning. It is therefore necessary in schools to develop effective models of educating students for learning to learn, and to stimulate new research regarding this issue. Research done by Suzić (2004) showed that the training program for learning can be very effectively implemented already in the beginning of school education, from the first years of schooling. He conducted the experimental program "Learning to learn" on students of elementary school. This program includes a series of exercises and workshops that introduce students to techniques for effective memorizing and learning. In a short period of time students have mastered and used learning techniques efficiently using regular curriculum material.

Since we concluded in the previous discussions that learning to learn must be learned, it is a great responsibility and role of teachers to develop these competencies in students at any level of education. This research has shown that even previous (elementary school), and even the current (high school) level of education has not contributed to the development of strategic learning. Therefore, the school and the teachers are expected to invest additional effort and commitment to the plan to stimulate strategic learning in high school students. Otherwise, as pointed out by Antić (2015), we will have young people and future professionals who have not mastered a deeper understanding of learned content, and who are not prepared for self-education and lifelong learning. Therefore, reasonable small steps in encouraging students to learn to learn are desirable. Suzić (2004) points out that there is a reasonable assumption, built on the basis of few researches, that students develop their own learning strategies from a number of small learning techniques which they apply by transfer on related content. In this context, we can talk about the need for the construction of pedagogy that will educate students to learn.

Learning strategies of high school students in relation to the categorical variable grade

The second hypothesis of our research is that the years spent in school educated students regarding to strategic learning. This hypothesis would be best to prove by using longitudinal research on the same sample of students. In our study we compared a larger number of students of first and third grade, assuming that the competence of students in the use of learning strategies would be in favor of students of third grade. We assumed that the arithmetic means measured in students of first and third grade will give statistic significant parameters if they are statistically significant different. In pursuit of these differences, we used t-test as a measure of statistical significance among students of first and third grade. When it comes to the SUS-scaler, only the reading subtest quality data does not meet the assumption of equality of variances ($p = 0.022$), and in this case we are using the value of t-test calculated without assuming equality of variances. Some measures of descriptive statistics, as well as the t-test for categorical variable grade are presented in Table 3.

Table 3: Learning strategies in relation to the categorical variable grade (t-value)

	Grade	Number of respondents	Arithmetic mean	Standard deviation	t	p
Notes	First	370	59,85	11,46	2,54	**0,011**
	Third	361	57,68	11,57		
Sources of learning	First	370	60,41	12,86	3,93	**0,000**
	Third	361	56,58	13,46		
Planning of learning	First	370	26,24	5,35	4,58	**0,000**
	Third	361	24,33	5,90		
Quality learning	First	370	18,82	4,38	3,05	**0,002**
	Third	361	17,78	4,82		
Effective memorizing	First	370	25,53	5,64	1,23	0,220
	Third	361	25,01	6,02		
SUS– score	First	370	190,84	31,78	3,96	**0,000**
	Third	361	181,38	32,87		

Key: N – number of respondents; M – arithmetic mean; SD – standard deviation; t – t-test; p – statistical significance

From Table 3, it is evident a statistically significant difference is present in the responses of students of first and third grade at the SUS-scaler and most of its subtests. The values of arithmetic means in Table 3 tell us that the students of first grade achieve better results in the SUS-scaler and all subtests of this instrument. The difference was not statistically significant only in the subtest Effective memorizing ($t = 1.23$; $p = 0.220$). We interpret this with the fact that the traditional school requires students to memorize an enormous amount of material, expecting students to focus on reproduction and memorizing, more precisely, on the lowest forms of cognitive processing by Bloom's taxonomy. In doing so, students are not referred to techniques of effective memorizing. Students at the beginning of her high school education, thus, have equal access to techniques for effective memorizing just like the students at the end of their secondary education. It would be here desirable to develop a serious program for educating high school students to easily and efficiently memorize. Suzić (2005) gives us some theoretical elaboration. It is regarding to techniques for effective memorizing which would introduced students to the system for orienting in information, to the knowledge of separating important from unimportant, to fast reading and other activities to facilitate and enhance effective memorizing. Thus, the data above tell us that the years spent in school does not educate students when it comes to strategic learning. These data indicate that schools do little work on the introduction and education of students to a strategic approach to learning. The students are expected to learn on a daily basis large amounts of content from different fields, but rarely when they were provided information on proven strategies that will enable them to efficiently and effectively learn. Students regarding this issue usually are left alone, without clear instructions on how to learn. Therefore, the question arises how schools can contribute to the development of strategic learning? Here we lack consistent and experimentally verified programs of development of strategic learning, which would go in the direction of pointing to the important role of school and teaching in educating students to strategic approach to learning. Also, the new research would be welcome, from checking of efficient memorizing to complete education for new learning strategies.

For general SUS scores were calculated the extent of the impact of the variable grade, and we got the information that eta squared is equal to 0.02. Koen guidelines (according to Pallant, 2009) for the interpretation of this size, tells us that it was a small impact. More precisely, the grade differences explain 2% of variance of the general SUS score.

Since the compared students were from first and third grade, and taking into account the sign of t-test on all subtests of the SUS-scaler (which is positive), it is clear that the difference in the expression of strategic is more noticeable in first grade students. This situation leads us to the conclusion that we cannot accept our second hypothesis of the research. More precisely, the years spent in school do not prepare students for strategic learning.

Type of high school and learning strategies

According to the third hypothesis of this study, it was expected that the students of Gymnasium and Secondary Commercial School would show a higher level of development of learning strategies in relation to students of apprenticeships. Since the data on the variables that represent learning strategies meet the requirements imposed by parametric procedures (normal distribution), we tested this hypothesis using single factor analysis of variance (ANOVA) and Fisher coefficient (F-test) as a measure of statistical significance among students of different high schools.

Table 4 provides insight into some indicators of descriptive statistics, as well as the results of single-factor univariate ANOVA.

Table 4. Learning strategies regarding to the type of high school (ANOVA)

Variable	Secondary school	Number of respondents	Arithmetic mean	Standard deviation	F	p
Notes	Gymnasium	264	60,41	10,28		
	Secondary Commercial school	240	60,63	10,86		
	Apprenticeships	227	54,92	12,72		
	Total	731	58,78	11,56	19,30	**0,000**
Sources of learning	Gymnasium	264	60,52	11,91		
	Secondary Commercial school	240	61,77	12,84		
	Apprenticeships	227	52,76	13,48		
	Total	731	58,52	13,29	34,39	**0,000**
Planning of learning	Gymnasium	264	24,97	5,08		
	Secondary Commercial school	240	26,10	5,32		
	Apprenticeships	227	24,82	6,65		
	Total	731	25,29	5,71	3,65	**0,027**
Quality reading	Gymnasium	264	19,36	3,97		
	Secondary Commercial school	240	18,73	4,59		
	Apprenticeships	227	16,63	4,91		
	Total	731	18,31	4,63	24,34	**0,000**
Effective memorizing	Gymnasium	264	26,27	4,62		
	Secondary Commercial school	240	26,09	5,37		
	Apprenticeships	227	23,24	6,98		
	Total	731	25,27	5,84	21,04	**0,000**
SUS-scaler	Gymnasium	264	191,53	26,99		
	Secondary Commercial school	240	193,33	30,69		
	Apprenticeships	227	172,36	36,31		
	Total	731	186,17	32,65	32,17	**0,000**

Key: N – number of respondents; M – arithmetic mean; SD – standard deviation; F – Fisher coefficient; p – statistical significance

Table 4 shows that the responses of students with regard to the type of high school differ significantly on the general score of the SUS-scaler and all its subtests. According to the values of arithmetic means we can notice that the students of apprenticeships achieved significantly lower values on the general score of the SUS-scaler compared to students of Gymnasium and Secondary Commercial School.

We calculated eta squared for the general SUS scores, and got the information that its value is 0.08. Koen (according to Pallant, 2009) interpreted this value eta squares as a secondary effect of the independent variable on the dependent variable.

After we found a statistically significant difference in the general score of the SUS-scaler and all its subsets, with the help of Fisher's coefficient, we wanted to know precisely where the difference between high school students, High School and apprenticeships are. This was allowed by using the process of multiple comparisons and Tukey's HSD test (Tukey HSD Post Hoc test).

Table 5. Post Hoc comparisons of the categorical variable type of secondary school

	Type of secondary school		Significant differences	p
Notes	1	2	-0,22	0,974
		3	5,49*	**0,000**
	2	3	5,71*	**0,000**
Sources of learning	1	2	-1,25	0,512
		3	7,76*	**0,000**
	2	3	9,01*	**0,000**
Planning of learning	1	2	-1,13	0,067
		3	0,15	0,951
	2	3	1,28*	**0,039**
Quality reading	1	2	0,63	0,252
		3	2,74*	**0,000**
	2	3	2,10*	**0,000**
Effective memorizing	1	2	0,17	0,940
		3	3,02*	**0,000**
	2	3	2,85*	**0,000**
SUS–scaler	1	2	-1,79	0,796
		3	19,17*	**0,000**
	2	3	20,97*	**0,000**

Key: * significant difference at level p < 0,05; 1 - Gymnasium; 2 – Secondary Commercial School; 3 – Apprenticeships

In Table 5 we clearly see that the students of apprenticeships achieved significantly lower values on the general score of the SUS-scaler compared to students of Gymnasium and Secondary Commercial School. The procedure of multiple comparisons and Tukey's HSD Post Hoc comparisons, shown in Table 5, has gave us more accurate interpretations when it comes to the differences in the responses of students with regard to the type of high school. The study found no differences in the responses of students of apprenticeships and from Gymnasium students and Secondary Commercial School in the general score of the SUS-scaler and subtests of this instrument: Notes, Sources of learning, Quality reading, Effective memorizing. On subtest Planning of learning difference were only noticed between students of apprenticeships and students High School. Also, it was noted that there is no difference in the responses of students of Gymnasium and Secondary Commercial School on any variable that has been the subject of multiple comparisons. These results lead to accepting the third hypothesis of our study, which is that students of Gymnasium and Secondary Commercial School have a higher level of development of learning strategies in relation to students of apprenticeships.

Now we have to ask ourselves what is the pedagogical value of this finding? Today's system of education in schools that prepare students for apprenticeships is inadequate for students. The point is that their school does not offer them conditions for successful learning, and that the programs are too difficult and with little practical content. This is not in accordance with the needs of society, but also with the needs of the students. Therefore, the educational authorities have to consider the question of innovating curricula for schools that prepare students for apprenticeships. It is certain that these students can be motivated as gymnasium students, and strategic approach to learning, only if we provide them with programs in which they can succeed.

CONCLUSIONS AND PEDAGOGICAL IMPLICATIONS

The question of how to encourage and promote learning strategies among students still represents an open question in educational theory and practice. Results obtained from the research have a particular pedagogical value because we shed light on some important questions that must be answered if we want to go in the direction of sending students into the lawfulness of strategic learning.

In examining the level of development of learning strategies of high school students, the difference with respect to the grade the type of high school students were attending, on a sample of 731 high school students in Tuzla, we have reached a result that allows the presentation of basic conclusions and thereby provide answers to the given hypothesis.

In fact, with our research, we came to devastating information that as many as 84.9% of high school students in learning and work at the school material do not use any learning strategies. The reasons for this state should, first of all, be sought in the lack of knowledge of students of the lawfulness of strategic learning. It is for these reasons students should offered such education system that will, in addition to educating students for today required skills, which includes proven methods, techniques and strategies necessary for fast and efficient learning. It is for teachers to allow students to use as many senses and ways of learning (listening, reading, discussion, writing, critical reasoning ...), and carry out experiments and practically demonstrate what is being said. Also, students should be provided with a wide repertoire of choice of alternative models of learning which would suit them best.

As a result of our research, we have the fact that the students of the first grade achieve better results in the SUS-scaler and all subtests of this instrument in relation to the students of third grade. A statistically significant difference in the responses of students first and third grade at SUS-scaler and most of its subtests was confirmed. According to the results, the years spent in school do not educate students when it comes to strategic learning. It is therefore essential that the teaching process devote more attention to stimulating and developing strategic learning in high school students. However, there may be a problem, because students often see mastering of strategies and ways for successful learning as additional learning and therefore may show aversion. Excessive curricula and lack of practice at the level of high school classes further complicate the problem and discourage students to look for successful methods and learning strategies themselves.

The results of our study have confirmed that students of apprenticeships achieved significantly lower scores on the SUS-scaler and all its subtests compared to students of Gymnasium and Secondary Commercial School. This result was expected given that students of apprenticeships, in most cases, do not continue their education after high school, and are more focused on mastering practices. With this result, therefore, we have diagnosed at what level of development are individual learning strategies in high school students, and thus we have provided guidelines for all future researchers of this issue, and also teachers and practitioners for the further development and improvement of these strategies.

We hope that our research will encourage many teachers and practical pedagogues in their school, to examine the development of learning strategies in their sample of students. Further studies of learning strategies of high school students should enable the verification of the validity of our findings, because it is a concept that in our environment is not sufficiently explored. One comprehensive study should be conducted to discover the causes of underdevelopment of learning strategies among students, and the role and place of the school when it comes to educating students to strategic approach to learning. Information on the application in classrooms of specific programs which would test effective and pedagogically desirable changes in this area would be extremely useful.

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