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TEACHER'S MENTAL CHARACTERISTICS AND STUDENTS' METACOGNITIVE STRATEGIES

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Abstract

The aim of this research was to establish the correlation between teachers' mental characteristics and students' metacognitive strategies. Teachers' mental characteristics were examined through: positive emotional reactions, negative emotional reactions and teachers' indifference. The issue is about the students' estimations of teachers' mental characteristics. Metacognitive strategies which are explored are: consciousness of students' own cognitive function, planning and monitoring of the same. Research was realized in two elementary schools in the area of East Sarajevo, using the sample of the seventh, eight and ninth-grade students. The results show that the emotional positive reaction is the only variable which appears as a positive predictor in realizing of all metacognitive strategies.

Key words: *teachers' mental characteristics, metacognitive strategies*

Teachers' mental characteristics

A teacher influences not only with teaching methods and acts but also with all his/her person. It is emphasized that teacher's mental characteristics (teacher's person) are the most important factor in the teaching process. A good curriculum and good methods can't replace teacher's love and interest in pupils. Bosiljka and Jovan Djordjevic's findings (1988) show that pupils don't care about teacher's didactical knowledge as much as they care about teacher's kindness and will to help them. Evans as quoted by Laketa and Vasiljevic (2006) paid special attention to teacher's person and concluded that the teacher has the biggest influence on pupils after parents. He also established that success of pupils in the teaching process depended on teacher's behaviour.

When exploring definitions regarding teachers' mental characteristics, it was necessary to delimit differences in terms which exist. What Jersald (1972) called human qualities, universally human characteristics, Laketa (1998) called general human attributes, as noted by reference to the Pedagogical Dictionary (1967). In the Pedagogical Dictionary it was said that a person represents an organization of physical, mental and psycho-social characteristics. PON Inventory (PON- teacher's mental characteristics) was constructed for the needs of exploring teachers' mental characteristics on the base of accessed literature whose aim was to research teacher's

mental characteristics. Teacher's mental characteristics were examined through three subscales: negative emotional reactions, indifference and positive emotional reactions of teachers. The issue is about the students' estimations of teachers' mental characteristics. Items in the subscales represent short, abstract resume of a large number of researches. Some of them will be shown in the text below. In the greater part of that exploring it was pointed out that students mostly appreciate the following human qualities: kindness in communication, ability for helping students, friendly personality and so on (Djordjevic, Djordjevic, 1988). In the known study about students' preferences of teachers' characteristics, Jersald (1972) determined that students prefer teachers who, above all, possess human qualities (cheerfulness, naturalness, good mood).

According to exploring results of Evans, Mcfarland, Bernard, Kierstead (Evans, Mcfarland, Bernard, Kierstead 1972, 1988; as quoted Бјекић, 1999), the following list contains items that students have used to describe their *best teachers*: kindness, cheerfulness, friendly mood, sense of humour, enthusiasm, understanding for students' needs, support and concern for students, collaboration, teacher knows the subject, consistency.

Radovanovic research results (1997) showed that a teacher should be kind, natural, cheerful, humorous, honest, sociable, neutral, objective, and Djordjevic (1988), as a successful teacher, indicated to a teacher who listens carefully, who is patient, good-tempered, enthusiast, pleasant, humorous and so on. Novak Laketa (Новак Лакета, 1998) wrote that the teacher should be calm, composed, humorous, right, confidential, categorical, serious, tolerant, good natured, emotional, and trustful and so on. NASSP testing (NASSP, 1997) showed that students aged 13 to 17, specified the following characteristics of a good teacher: sense of humour, concern for students, good relations with students, understanding for students' needs. All these characteristics made the representative sample of mental characteristic which one teacher should possess. We committed ourselves to exploring these putative teachers' mental characteristics that can have an influence on developing students' metacognitive strategies.

Metacognitive strategies of students

Defining Metacognition as "cognition about cognition", or "knowing about knowing" is not enough. Researchers therefore tried to define metacognition in other ways. They came to the same or similar conclusions and divided metacognition into its components. J. H. Flavell first used the word "metacognition". Different fields define metacognition very differently. Metacognition variously refers to the study of memory-monitoring and self-regulation, *meta-reasoning*, *consciousness/awareness* and *auto-consciousness/self-awareness*. Panaoura, Philippu (2006) divided the metacognition into its component parts: knowing one's own cognition and regulating one's own cognition. Although the concept "metacognition" has been defined in numerous ways, the most researchers suggest a focus on its component parts, which are knowledge about one's own cognition and regulation one's own cognition. We are interested in researching metacognitive strategies from the aspects of the following components: knowledge about one's own cognition (*metacognitive awareness*) which refers to what individuals know about themselves and *metacognitive regulation* (the regulation of cognition and

learning experiences through a set of activities that help people control their learning). Regulation of cognition refers to how a learner can regulate his/her own learning process. Emphasizing the metacognitive strategies we would like to accentuate the learning process itself not only products (learning results). Knowing how to learn and knowing what strategies are optimal for a learning process are valuable skills. Metacognitive strategies which are explored in this paper are: consciousness of one's own cognitive function, planning and monitoring of the same. Consciousness of one's own cognitive function has been classified by many researchers (Flavell, 1979; Peirce, 2003; Brown, 1987; Phillippou, 2006). The planning of one's own cognitive function and the monitoring of one's own cognitive function have been classified by many researchers, too. Some of them are: Flavell, 1979, Brown, 1987, Sternberg, 1984, Philippou, 2006. A more detailed classification of metacognitive strategies was shown in Ridley, Schutz, Glanz and Weinstein work (1992). In Mirkov's study (2005), two classifications were shown: Anderson's (2002) and Freeman's (1992). Peirce (2003) showed two classifications (Blakey, Spence, 1990 and Dirkes, 1985) in his paper, too. Metacognitive awareness expresses understanding of oneself as a person who learns and represents knowledge and consciousness of a student about his/her own learning process. It is a key to a successful learning process. It is declarative knowledge which refers on the self-consciousness. It requires knowledge of his/ her abilities, interests, wishes, motives. This consciousness about one's own mental activities involves general knowledge and beliefs about possible strategies for task solving. Most of the teaching situations and teaching materials don't encourage this kind of reflection and that is why they don't contribute to the development of metacognitive strategies. In spite of this fact, the purpose of the teaching process must be clear to the student. Students should be enabled to understand why they learn something, how they learn something, the type of material they use, activities they carry out, optimal strategies they use to remember teaching content easier, as well as how to control their learning process and to decide what is next to be done. Ellis (1999) considers that teacher's responsibility is to add the missing dimension to teaching process. Teachers would teach students to become conscious of their own learning process and to encourage critical reflection of the students. All questions which refer to students' learning process have to be clear and directly correlated with students' experience. If questions are not correctly formulated and concrete, especially the abstract and new content, and if they are not asked in an acceptable language, students will be confused and incapable to answer in the way which will help teachers to understand the students' learning process.

The planning of the one's own cognitive function pertains to the mastering of metacognition. Planning as the part of these processes looks like part of cognition, but, it is also the process of a higher level because of its controlling role in the cognition. Students can be taught to make plans for learning activities, which include estimating time requirements, organizing materials, and scheduling procedures necessary for completing the activity. The resource centre's flexibility and access to a variety of materials allow students to do just this. Criteria for evaluation must be developed with students so they learn to think and ask questions about themselves as they proceed through a learning activity.

The monitoring of one's own cognitive process involves work control and control of what has been already done. This metacognitive strategy also involves time for self-

evaluating during the learning process. Gradually self-evaluation will be applied more independently.

Method

The research question addresses the specific aim: to explore correlation between teachers' mental characteristics and students' metacognitive strategies. We guessed that there was a correlation between teachers' mental characteristics and students' metacognitive strategies.

The sample: research was realized in two elementary schools in the area of East Sarajevo, on a sample of seventh, eight and ninth-grade students. Data were collected from 665 students.

Questionnaires were developed originally for this paper. One of them, METAS, measures the students' metacognitive strategies and it is specially constructed for this research. The instrument consisted of three main parts: consciousness about one's own cognitive function, planning of one's own cognitive function and monitoring of one's own cognitive function. In the next chapters, they will be referred to as: SVJ, PLAN and NAD. This instrument as consisted of 50 Likert type items of five points: 1=never, 2=seldom, 3=sometimes, 4=often, 5=always. Most of the items were given in the affirmative form except items 5 and 6, which were given in the negative form.

Teachers' mental characteristics were measured by PON-specially constructed instrument for this research. The instrument was constructed with three subscales: emotional positive reactions, emotional negative reactions of teacher and teacher's indifference. In the next chapters, these will be referred to as: ENR, EPR and RAV. All items had an affirmative form. Because of normal distribution and interval level of measuring for dependent and independent variable, it was possible to use the following statistics: Pearson correlation and regression analysis.

Results

The major aim of the study was to assess the relationship between teachers' mental characteristics and students' metacognitive strategies. Table 1 presents the correlation analysis of these variables.

Pearson correlations, presented in Table 1, indicate that there is a correlation between positive emotional reactions and all metacognitive strategies, which is significant at the level of 0.01. Results of this correlation analysis show that there is no correlation between teachers' indifference and SVJ, PLAN and NAD as individual students' metacognitive strategies. Also, there is no correlation between negative emotional reaction and metacognitive strategies. We have to emphasise that there is a correlation between SVJ and NAD and teachers' negative emotional reactions, but that correlation has a negative direction. In fact, demonstrated negative emotional teachers' reactions led to a smaller students' consciousness of their cognitive function.

Table 1 *Correlations between individual metacognitive strategies and components of teachers' mental characteristics.*

	SVJ	PLAN	NAD	ENR	RAV	EPR
ENR	-.090**	.009	-.089	1.000	.351**	-.437**
RAV	-.082	-.014	-.080	.351**	1.000	-.262**
EPR	.381**	.263**	.322**	-.437**	-.262**	1.000

Mention:

**correlation is significant at the level of 0.01.

* correlation is significant at the level of 0.05.

SVJ - consciousness about one's own cognitive function,

PLAN - planning one's one cognitive function,

NAD - monitoring one's one cognitive function,

ENR - teacher's emotional negative reaction,

RAV - teacher's indifference,

EPR - teacher's emotional positive reaction.

A multivariate regression was conducted to determine if the set of independent variables, negative emotional reactions, emotional positive reactions and teachers' indifference could be used to predict the three metacognitive variables. We obtained a model with three predictor's variables. The next table (Table 2) shows the results of multiple regressions.

The table's results show that teachers' indifference is the lowest predictor for student's consciousness of his/her own cognitive function. Negative emotional reactions did not appear as a positive predictor, but positive emotional reactions of the teacher appeared as a significant positive predictor appears. Comparing all models, it is clear that this model provides the strongest prediction (16% of total variance in the criteria variable). The following table (Table 3) presents a summary of the regression analysis for dependent variable-planning of one's own cognitive function.

Table 2 *Multiple regression analysis between teachers' mental characteristics and consciousness of one's one cognitive function*

	Predictors	BETA unstand.	SE	BETA stand.	t	p
<i>Consciousness</i> R=0.408 R ² =0.166 F=26.918 p=0.000	EHP	.241	.102	.128	2.375	.081
	PAB	-1.528E-02	.123	-.006	-.124	.901
	EHP	.531	.061	.451	8.681	.000

Partial influence of individual predictors' variables on the dependent variable PLAN is visible from the standardized regression coefficients. Teachers' positive emotional reactions and negative emotional reactions appear as significant positive predictors at the level 0.01, and accordingly at 0.05. It is possible to notice that teachers' indifference is very close to be a significant predictor. It is possible to explain the 18% variance in the criteria variable with this model. The following table (Table 4) shows

values of standardized regression coefficients in the third model (predictors are teachers' mental characteristics and dependent variables are student's metacognitive strategies, in this example, dependent variable is monitoring of one's own cognitive function).

Table 3 *Multiple regression analysis between teachers' mental characteristics and planning of one's own cognitive function*

	Predictors	BETA unstand.	SE	BETA stand.	t	p
<i>Planning</i> R=0.293 R ² =0.086 F=12.271 p=0.000	EHP	.235	.107	.124	2.197	.029
	PAB	.228	.133	.090	1.715	.087
	EIP	.383	.064	.334	6.024	.000

Table 4 *Multiple regression analysis between teachers' mental characteristics and monitoring of one's own cognitive function*

	Predictors	BETA unstan.	SE	BETA stand.	t	p
<i>Monitoring</i> R=0.296 R ² =0.088 F=11.221 p=0.000	EHP	5.205E-02	.138	.023	.376	.707
	PAB	.146	.179	.046	.819	.413
	EIP	.469	.087	.314	5.399	.000

There is almost a 9% explained variance in the dependent variable. Standardized regression coefficients show that the positive predictor in this case is teacher's positive emotional reaction. Teachers' indifference and negative emotional reactions do not appear as predictors.

Analysis

The hypothesis that there is a correlation between teacher's mental characteristics and metacognitive strategies of pupils was confirmed. The correlation results show that there is a significant correlation between teacher's mental characteristics and students' metacognitive strategies at the level of 0.01. Because teacher's mental characteristics were researched through the following variables: Positive Emotional Reactions, Indifference and negative Emotional Reactions, we researched the relationship between these variables and individual metacognitive strategies. It was shown that there was no correlation between negative emotional teachers' reactions and metacognitive strategies, PLAN i NAD. There was a negative correlation between negative emotional teachers' reaction and SVJ as the first metacognitive reaction, which brings to the conclusion that

more expressive negative emotional teachers' reactions lead to a smaller presence of metacognitive awareness of pupils. The second variable, teachers' indifference correlates with no metacognitive strategies. The positive emotional reactions of teachers correlates with all metacognitive strategies at the level of 0.01.

The standardized regression coefficients analysis showed that teachers' positive emotional reactions appeared as a significant predictor in all three models. The results of multiple regression analysis demonstrated that the teachers' positive emotional reactions were a significant predictor in all dependant variables. The teachers with emotional positive reactions had more chances to develop metacognitive strategies of students compared to the teachers who showed negative emotional reactions. The teachers' indifference was a negative predictor only in the case of metacognitive awareness. In other cases there was no statistical significance. The negative emotional reactions appeared as a significant predictor only for the second metacognitive strategy, planning one's own cognitive function. Of all three models, the first model provided the best prediction and explained 16% in the dependent variable. The second and the third models could explain 8% and 9% of the explained variance in the dependent variables respectively.

The mental teachers' characteristics, following the results of other researches, appear as the base of successful communication between teacher and students. Mandic (1980) wrote that a teacher demonstrates his knowledge, basic occupations, moral attitudes, points of views and interhuman relations in the teaching process. If he/she is a moral person, a pedagogical enthusiast and generally a positive person, he will have a positive influence on students' behaviour and their development. But, on the other hand, a teacher can have a negative influence on the pupils. If the teacher demonstrates negative characteristics in the teaching process, he can disturb students' behaviour and make students insecure (Mandic, 1980). This author wrote about psychological sources of the power that teachers' characteristics have on the students. Jersald's (1972) research and researches performed by students from Sarajevo (1967) showed that students largely appreciate a teacher's personality (his human characteristics which he demonstrates in the communication with them). Erceg (1979) says that a teacher who is a positive person has a positive relation with the students and vice versa. The teacher's role in the teaching process has never been more complicated. If he wants to realize all his roles in the teaching process and to be creative, he must be able to suppress the pressure of his own needs. He must be able to come closer to students and to be more tolerant. Havelka research findings (2000) show that students report as the most important teachers characteristics: understanding (the mean is almost 4,74), just (the mean is almost 4,25), humorous (4.01). But, students report also that these characteristics are very rare in the teacher's behaviour. Radovanovic (1997) came to a similar result and confirmed that the presence of these characteristics is in a statistically positive correlation with the school success of students. Suzic (2000) came to similar results, too. He established that teacher's characteristics, seen via negative emotional and positive emotional reactions, influence students' motivation and their school success.

Between teacher's person and his role in the teaching process there is a mutual correlation. If a teacher shows negative emotional reactions, he will not be able to become a model of good behaviour and responsibility to the students. As a rule, teachers with negative characteristics show rigid behaviour and didactical stereotype. In other

words, it is clear why teachers' negative emotional characteristics have a negative correlation with metacognitive awareness. Teachers must have a strong will to overcome various obstructions in the teaching process and fulfil complicated requests of their profession. Kindness is a universal strategy on which teachers can base their relation with others including their students.

Conclusion

The hypothesis, which suggested that there was a correlation between teachers' mental characteristics and metacognitive strategies of students, was confirmed. First results showed that there was a correlation between the variables, so logically we tested other relations between individual metacognitive strategies and components of teachers' mental characteristics. It was shown that positive emotional reactions, as one of indicators tested via teachers' mental characteristics, correlated with all metacognitive strategies, while teacher's negative emotional reaction and indifference showed correlations with no metacognitive strategy.

Teacher's emotional positive reactions are a significant predictor in all dependent variables, so results of the Pearson correlation matched the results of multiple regressions. Results of other researches confirmed ours, because most of the researches emphasized the importance of teacher's positive emotions. Teachers' characteristics that students appreciate and those they do not appreciate can serve as a base for construction of pedagogical standards to be used in future as a starting point regarding acceptance of teachers in employment relations. Someone went further and suggested that only the people who have the following characteristics: friendly relation, good skills in personal contacts, cooperation and compatibility, integrity of male and female characteristics can be chosen as teachers.

In this rapidly changing world, the challenge of teaching is to help students to develop skills which will not become obsolete. Metacognitive strategies are essential for the twenty-first century. They will enable students to cope successfully with new situations. Teachers and school library media specialists capitalize on their talents as well as access a wealth of resources that will create a metacognitive environment which fosters the development of good thinkers who are successful problem-solvers and lifelong learners. Universal human characteristics, on one hand, are the result of specific character of someone's nature, but on the other hand, they are the precondition of sociability and interhuman relations and they depend on numerous situational conditions. In this way, exploring a teacher's success becomes a complicated task.

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ПСИХИЧКЕ ОСОБИНЕ НАСТАВНИКА И МЕТАКОГНИТИВНЕ СТРАТЕГИЈЕ УЧЕНИКА

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Резиме

Циљ овог истраживања био је да се утврди повезаност између психичких особина наставника и метакогнитивних стратегија ученика. Психичке особине наставника испитиване су преко емотивно позитивних реакција наставника, равнодушности и емотивно негативних реакција наставника, а процјењиване су помоћу теорије атрибуције. Ријеч је о ученичким процјенама психичких особина наставника. У оквиру метакогнитивних стратегија испитиване су: свјесност о сопственом когнитивном функционисању, планирање и надгледање сопственог когнитивног функционисања. Истраживање је реализовано у двије основне школе на подручју И. Сарајева на узорку седмог, осмог и деветог разреда. Добијени резултати показују да се варијабла емотивно позитивне реакције наставника показује као позитиван предиктор у испољавању свих метакогнитивних стратегија.

Кључне ријечи: *психичке особине наставника, метакогнитивне стратегије ученика*