THE RELATIONSHIP BETWEEN THE MOTIVATION TO LEARN AND SELECTED INDICATORS

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The research on motivation to learn as an indicator of the quality education is part of the Modern education for the knowledge-based society project / Project is co-financed from EU resource. The sample consists of 2690 1st year students of secondary school. We used an M-2 questionnaire to determine the students' motivation to learn. The goal was to determine whether the differences in motivation to learn depend on sex and type of school. The differences were shown between the motivation of men and women in favor of women. Among the schools, depending on either the founder or the type of the school, the difference was not proved. In total, students are considered to be sufficiently motivated.

Keywords: motivation to learn, unmotivation, type of school

Background

The research on motivation to learn as an indicator of the quality of education is part of the Modern education for the knowledge-based society project / Project is co-financed from EU resource.

Motivation to learn is an important element in the educational process. The way the student is motivated has an influence on his interest to learn new things - interesting things, uninteresting things, easy things, difficult things and also the things that they do not use in their everyday life (yet). An overall student´s motivation to learn, however, consists of various types of motivation (Lokšová & Lokša, 1999).

In the educational process, the most significant motivation is cognitive motivation. While using cognitive motivation, the cognitive activity takes place for the pleasure of the activity itself as well as the lesson learned. There is an effort to obtain new information as well as the meaningful arrangement of new information or the need to look for the problems and solve the problems (creatively) (Pavelková, 2002).

Externally, the student´s achievement motivation is expressed markedly. If a student is motivated by the need of successful performance, they learn new things, because they want to achieve success in school, they like competing with the peers, they are target-oriented and they tend to be persistent in solving the tasks despite the obstacles. On the contrary, if they are motivated more by the need to avoid failure, the student learns in order to avoid the failure. Sometimes they work with fear or anxiety of possible failure, and they usually try to avoid the situations in which they are evaluated (Hrabal, Man & Pavelková, 1989).

A student, as an individual functioning in a team, is a social creature and his behavior is motivated socially as well. If there is a significant need for prestige, they learn to be "seen" in order to maintain influence in the classroom, they want to organize the class, to offer a sense of power or on the other hand, they want to control the others for their delight (Hrabal, Man & Pavelková, 1989).

The other social determinant is the need for positive relationships. Students learn to have a good relationship with the environment (teachers, parents) or they want to be attractive for the environment (Hrabal, Man & Pavelková, 1989).

If students understand the education as their duty and they feel responsible for getting ready to school and for their school results, we say that they are motivated by moral motivation (Pavelková, 2002).

By gradual maturing of students, they begin to realize the importance of learning and they are motivated by the goals that they want to achieve in the future - whether it is a successful final exam or the chance to have a good job. According to instrumental motivation, students study because they assume that they will use the knowledge they learned in their work or in personal life in the future (even if they do not need it now) (Matejček, 1992).

If students are motivated by reward or punishment, they select such a pragmatic strategy, where they use the smallest effort to achieve the biggest school success. They just try to learn the information that is sufficient to pass the exam. They are trying to achieve an external reward (eg. gift for excellent grades) or to avoid the punishment (no computer games) (Hrabal, Man & Pavelková, 1989).

If students are distracted or discouraged from learning, if they are attracted by other activities, if learning seems to be difficult for them or they do not see the point of learning, then we talk about unmotivation. The main cause of unmotivation is boredom (boring lectures, too high or too low level of information) or fear (bad teacher, strict parents). The cause of unmotivation may also be the experience of significant failure (Pavelková, 2002).

Research Questions

Question 1: Is there the difference in motivation to learn between men and women?

Question 2: Is there the difference in motivation to learn between the students of secondary grammar schools and the other schools?

Question 3: Is there the difference in motivation to learn among the students of state, religious and private schools?

Methods
Participants

The research involved secondary school students from the experimental group of the 4.1. activity *The indicators of the quality of education* in school evaluation of the ESF project entitled Evaluation of the quality of education at primary and secondary schools in Slovakia in the context of ongoing reform of education content. It was the first year students of secondary schools. The data collection was conducted from November to December 2010 at 37 schools in Slovakia. The tables give the numbers of schools and students involved in testing according to sex (*Table 1*), founder of school (*Table 2*) and type of school (*Table 3*).

Table 1. *The number of pupils – male and female*

	Pupils	
Sex	Absolute frequencies	Relative frequencies (%)
Male	1366	50,8
Female	1324	49,2
Total	2690	100

Table 2. *The number of schools – public, private, religious*

	Schools		Pupils	
Type of school	Absolute frequencies	Relative frequencies (%)	Absolute frequencies	Relative frequencies (%)
Public school	30	81,1	2434	90,5
Private school	3	8,1	56	2,1
Religious school	4	3710,8	200	7,4
Total	37	100	2690	100

Table 3. *The number of schools – grammar and vocational*

	Schools		Pupils	
Type of school	Absolute frequencies	Relative frequencies (%)	Absolute frequencies	Relative frequencies (%)
Grammar school	18	48,6	1357	50,4
Vocational school	19	51,4	1333	49,6
Total	37	100	2690	100

Instrumentation

The author of the used M-2 questionnaire of motivation to learn is Isabella Pavelková, PhD., Doc., supplemented by Gabriela Farková, Mgr. in her diploma work (Farková, 2007). The questionnaire aspires the disability of students' motivation to learn. It examines the global level and what motives are dominant in the individual students´ hierarchy according to how they see them. It describes 8 aspects of motivation to learn and it decribes the area of unmotivation very marginally as well. The overall motivation to learn is the sum of the M-2 questionnaire items except the xa1 - xa5 items that belong to an unmotivation factor.

Results
Factor analysis

Using Kaiser-Mayer-Olkinov measurements, the measured value of 0.930 proved the suitability of using the factor analysis as outstanding, p-value is close to zero, thus the correlation matrix of observed variables with the risk of error 1% is different from the unit matrix (*Table 4*).

Using the factor analysis, we found 10 components, which fill the individual items. We were interested only in the correlations higher than 0.5, when we speak of strong correlations.

All components are not fully consistent with the factors of motivation designed by the questionnaire authors. 5 items of the „Achievement motivation - the need of successful performance" factor correlates less than

0.5. The other 2 items of this factor are associated more with Knowledge field factor. The items mentioned are „I try to overcome myself, to achieve something or create something." and „I want to develop and improve my skills." We could assign these items by the content to the knowledge field (skills acquisition, development of the obtained skills).

The items of „Social motivation - the need for prestige" factor highly correlate as well. This item is associated to the item of „Reward and punishment" factor, but $r = 0.520$, which is lower than with the other items of this factor. The item is „I want they praise me.", which may indicate that students do not understand praise as a reward, but as a form of prestige. The factors such as „Moral motivation", „Instrumental motivation", „Social motivation - the need for positive relationships" and „Achievement motivation - the need to avoid failure" factor showed as highly homogeneous factors.

The factor „Unmotivation" is filled by two components. This factor monitors the area that we could call an Interest in learning. This component is associated with the item „I enjoy learning" which originally belongs to the „Cognitive motivation" factor. It is the only positive correlation in this component. This factor is also associated with the item „I'm bored and I have no other interests"´ originally from "Cognitive motivation" factor. This component deals with the area of a kind of boredom, resignation and disinterest.

The filling of „Rewards and punishments" factor indicates that there is no motivation for learning by rewards and punishments, but a sort of area called „Fear of punishment".

Table 4. *Kaiser-Meyer-Olkin measurement in factor analysis*

KMO a Bartlett's test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.930
Bartlett's Test of Sphericity	Approx Chi-Square	40641.162
	df	1225
	Sig.	.000

Histogram

We searched the overall motivation in 2478 students. The histogram shows a normal distribution (Graph 1), with a slight shift to the right, to the higher score. We can say about the students that they are more motivated than unmotivated.

Graph 1. *Histogram of Motivation to Learn*
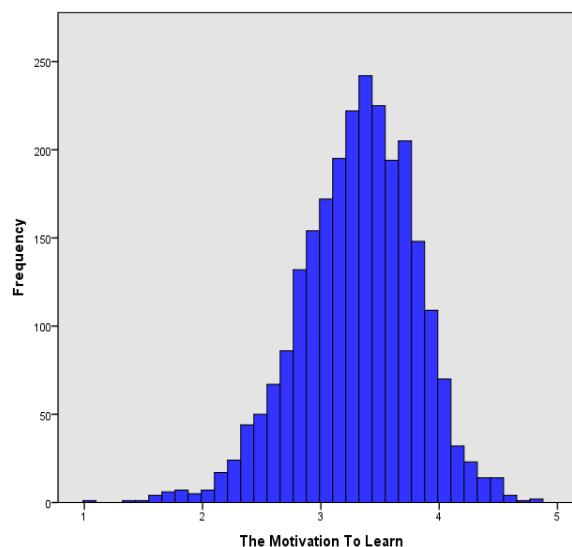
Research Question One

In *Table 5* we see the difference between the average scores for men and women. Women achieve higher scores.

Table 5. *The Motivation to Learn - breakdown by gender*

Sex	N	Mean
Male	1226	3,284
Female	1252	3,334
Total	2478	3,309

Student's t-test (*Table 6*) showed a significant difference between the average scores achieved by men and women, t (2445.037) = -2.511, p = 0.012. Women in our sample proved to be more motivated. This result is consistent with the current researches, eg. Blažková research (2001), which also showed the difference between men and women in secondary schools.

Table 6. *Student's t-test for comparison of mean scores of men and women*

Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
8.474	.004	-2.511	2445.037	.012	-.050	.020	-.088	-.011

Research Question Two

In *Table 7* we see the average score of students in secondary grammar schools and the other schools. The students of the others schools achieved higher scores. This difference in the results by Student's t-test was not significant.

Table 7. *The motivation to learn - division by type of school*

Type of school	N	Mean
Grammar school	1274	3.308
Vocational school	1204	3.311
Total	2478	3.309

When comparing secondary grammar schools with the other types of schools a significant difference in mean score t (2,476) = -.137, p = .891 (*Table 8*) was not shown.

Table 8. *Student's t-test for comparison of the average scores of secondary grammar schools and the other schools*

Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
,584	,445	-,137	2476	,891	-,002711	,019738	-,041416	,035994

Graph 2. *Picture of the average score achievement for each school depending on the type of school*
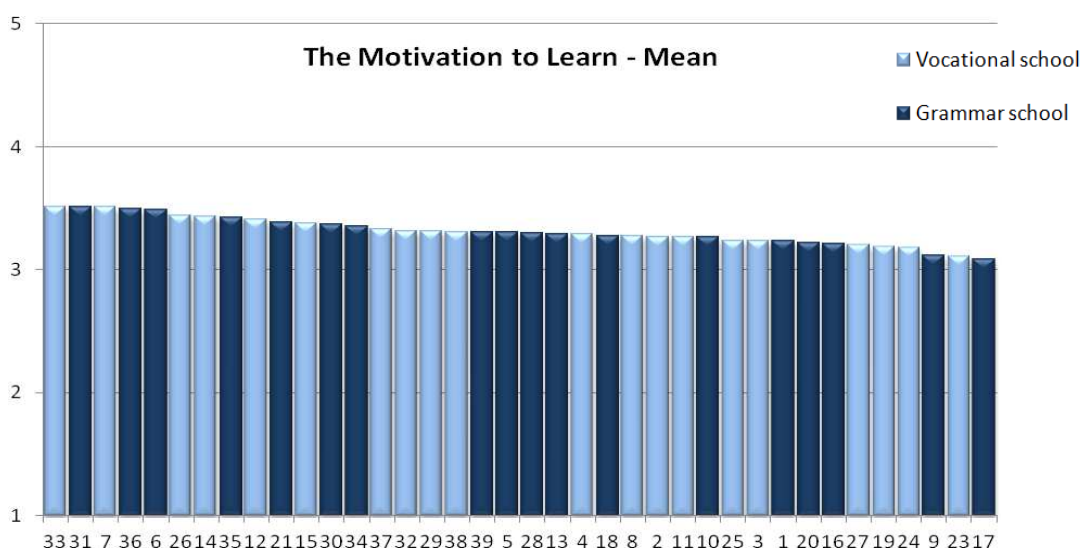
Research Question Three

In *Table 9* we see the average scores of students of state, religious and private schools. Among the different types of schools according to the founder, the significant differences in the overall motivation were not proved.

Table 9. *Comparison of mean scores of experimental sample and different types of schools*

| The mean of the experimental sample = 3.310					
Type of school	Mean	t	df	Sig. (2-tailed)	r
Public school	3,31	-,112	2246	,835	.00
Privat school	3,32	,148	49	,896	.02
Religious school	3,32	,423	180	,694	.03

Graph 3. *Picture of the average score achievement of the individual schools*
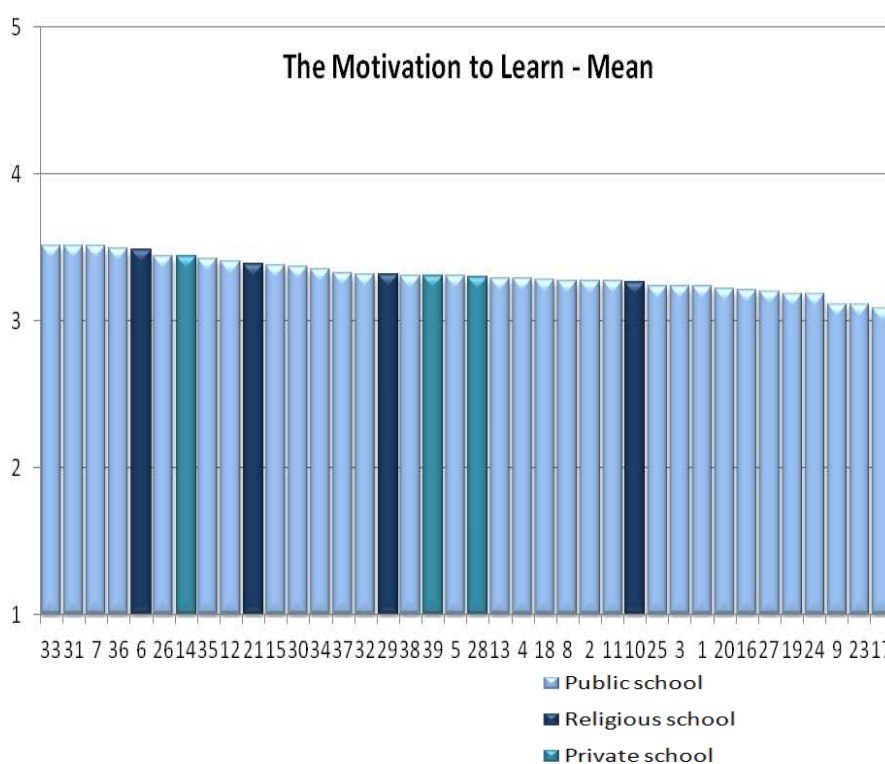
Blank Questions

During the testing by M-2 questionnaire, at least one student did not respond in each statement. The total number of not responding students in one statement did not exceed the number of 20 pupils. Most students did not comment on the statement xa1 – xa5 statement, covering unmotivation. These statements were at the same time the last statements in a questionnaire. This could therefore be because of fatigue, loss of concentration and interest, but also an annoying type of questions could be a reason for certain students. The outline of the non-responding students is shown in *Graph 4*, divided in two pages, the way the questionnaire was divided too while the administration.

Graph 4. *Number of pupils without response. Last five questions are questions about unmotivation*

Number of Blank Questions
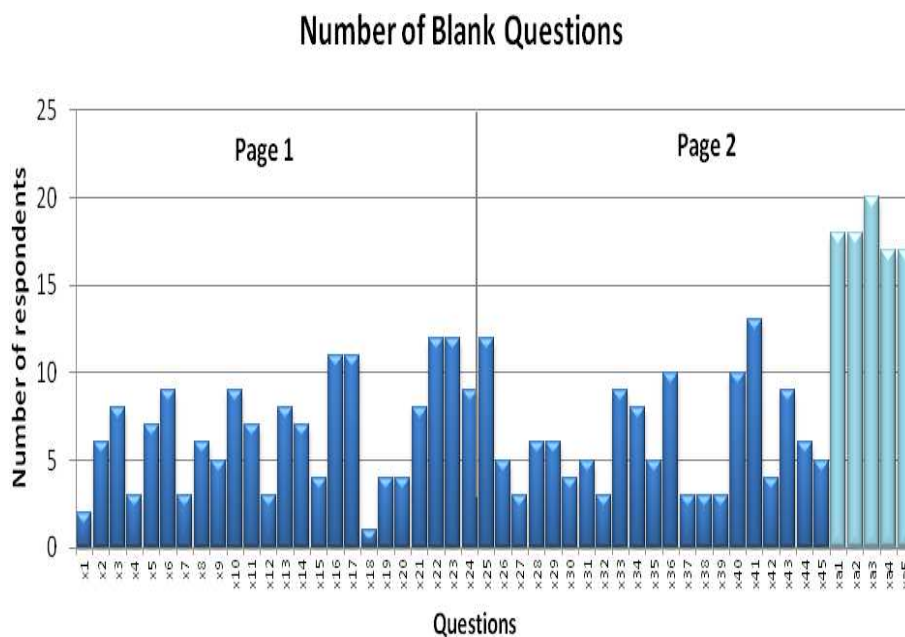
Intercorrelations among the motivation factors

Among the factors of the M-2 questionnaire, the strong factual and statistical correlations were demonstrated. According to this, we can assume that the most significant factors that predict students´ motivation to learn is their need for successful performance and positive relationships throughout their education.

Table 10. *The correlation matrix factors of motivation to learn*

		Cognitive Motivation	Achievement Motivation – The Need a Succesful Performance	Achievement Motivation - The Need to Avoid Failure	Social Motivation – The Need of Prestige	Social Motivation - The Need of Positive Relationships	Moral Motivation	Instrumental Motivation	Motivation of Rewards and Punishments	The Motivation to Learn
Unmotivation	r	-.275**	-.299**	.197**	-,039	-.082**	-.131**	-.154**	.138**	-.140**
	Sig	,000	,000	,000	,053	,000	,000	,000	,000	,000
Cognitive motivation	r		.693**	.210**	.399**	.369**	.287**	.393**	.257**	.708**
	Sig		,000	,000	,000	,000	,000	,000	,000	,000
Achievement Motivation – The Need a Succesful	r			.241**	.450**	.522**	.450**	.518**	.284**	.805**
	Sig			,000	,000	,000	,000	,000	,000	,000
Achievement Motivation - The Need to Avoid	r				.304**	.409**	.323**	.207**	.515**	.576**
	Sig				,000	,000	,000	,000	,000	,000
Social Motivation – The Need of Prestige	r					.378**	.158**	.230**	.482**	.644**
	Sig					,000	,000	,000	,000	,000
Social Motivation - The Need of Positive Relations	r						.449**	.412**	.484**	.737**
	Sig						,000	,000	,000	,000
Moral Motivation	r							.384**	.289**	.619**
	Sig							,000	,000	,000
Instrumental Motivation	r								.243**	.613**
	Sig								,000	,000
Motivation of Rewards and Punishments	r									.638**
	Sig									,000

Reliability

The overall reliability of M-2 questionnaire reached the value of .893,so we can talk about high usibility. The reliability of the individual motivation factors did not fall below .624, so the individual factors of M-2 questionnaire can be used as an additional evaluation criterion.

Table 11. *Cronbach's Alpha for each factor of motivation and overall motivation*

Factors of motivaton	Cronbach's Alpha	Number of Questions
Cognitive Motivation	,727	8
Achievement Motivation – The Need a succesful Performance	,800	7
Achievement Motivation – The Need to Avoid Failure	,642	5
Social Motivation – The Need of Prestige	,788	5
Social Motivation – The Need of Positive Relationship	,645	5
Moral Motivation	,728	5
Instrumental Motivation	,694	5
Rewards and Punishment	,656	4
Unmotivation	,624	5
The Motivation to Learn	,893	50

The characteristics of probands

The students from our experimental sample have the Instrumental motivation most developed. The need to avoid failure is determining their relationship to learn the least. It is a group of students who are asked the appropriate requirements and are not overloaded. This confirms the status of need for successful performance, which is the second most powerful determinant of their motivation to learn. The need for positive relationships is developed more than the need of prestige, that is rather a group with a positive climate. This was confirmed by the other research of the social climate in this sample, which showed that these students perceive their school climate as positive. The status of moral motivation suggests that the group shows a developed responsibility for the obligations. The value of total motivation to learn moves to the upper half of the possible score, a group of these students apparently has a positive approach to learning, their motivation is rather higher.

These results are in contrast with Marušincová, Kollárik and Okruhlicová (1992) research, who also examined the students starting the secondary school. With these students, the need to avoid failure proved to be very significant, which was not confirmed in our sample.

Graph 5. *Average scores achieved by the experimental sample in all the factors of motivation*
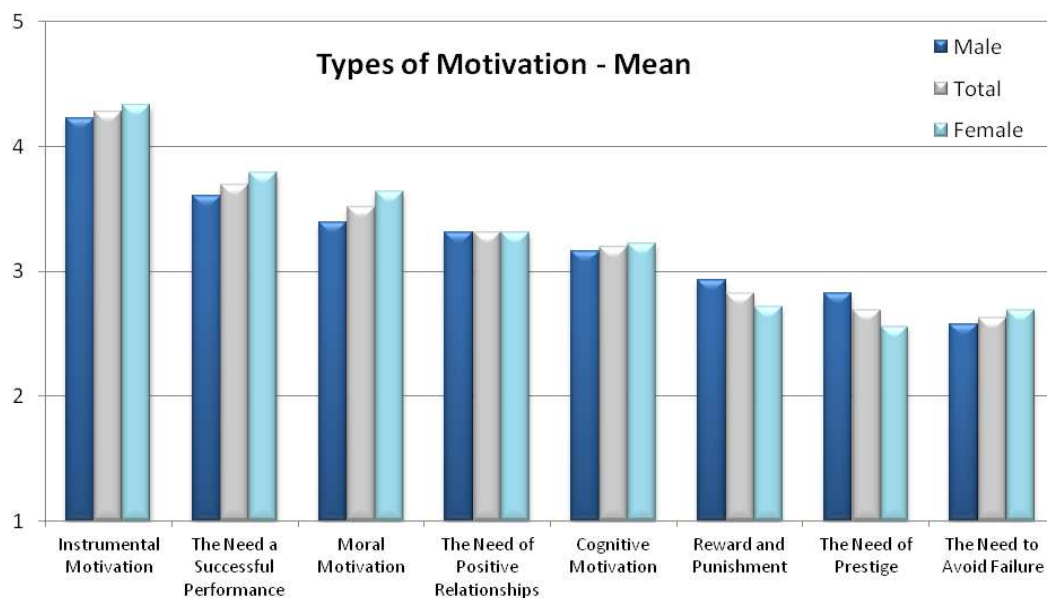
Summary

By examining the motivation to learn, we found that sex is the important determinant of motivation. We measured higher motivation to learn with girls.They have a greater need to avoid failure and an increased need for successful performance. Also, girls have higher cognitive motivation, instrumental motivation and moral motivation. The boys achieved a statistically significant result in motivation by rewards and punishments and the higher need for prestige than girls. Blažková and Stransky (2001) research also confirmed the higher overall motivation to learn among girls.

Students of secondary grammar schools achieved higher levels in the need for a successful performance and moral motivation, the students of the other schools achieved higher levels in the rewards and motivation tests, the need for positive relationships and unmotivation.

Religious schools achieved statistically significant higher values – in moral motivation, public schools reached the lowest values of unmotivation and private schools achieved high levels in the need for successful performance and the need for prestige and low values – in the need to avoid failure.

Implications

By using M-2 questionnaire, we investigated the aspects of motivation, unmotivation and overall motivation to learn of the first year students of secondary schools. Further use of M-2 questionnaire, we recommend using M-2 while examining the motivation to learn in relation to school performance. The findings, which are the most motivating factors that determine students´ learning and to what extent (if we know his studying results), can help teachers to work with the disadvantaged students and improve their results. According to the findings of previous studies, low levels of achievement motivation indicate worse results (grade 2.5 or worse). Assuming that the overall motivation to learn is a partial predictor of school

grades, we can incline to this statement partially, as the correlation of achievement motivation and overall motivation is very strong in our sample.

References

BLAŽKOVÁ, H., & STRANSKY, Z. (2001). Motivace žáků k učení. In *Sborník prací Filozofické fakulty Brněnské univerzity, řada psychologická* (pp. 7-25).

FARKOVÁ, G. (2007). *Vztah mezi motivací žáků k učení a vybranými aspekty rodinného prostředí*. Diplomová práca. Brno: Masarykova Univerzita.

HRABAL, V., MAN. F., & PAVELKOVÁ, I. (1989). *Psychologické otázky motivace ve škole*. Praha: SPN.

LOKŠOVÁ, I., & LOKŠA, J. (1999). *Pozornost, motivace, relaxace a tvořivost dětí ve škole: cvičení pro rozvoj soustředění a motivace žáků*. Praha: Portál.

MARUŠINCOVÁ, E., KOLLÁRIK, K., & OKRUHLICOVÁ, A. (1992). Motivácia učenia žiakov začínajúcich štúdium na stredných školách. *Pedagogická revue*, *44* (7), 517-529.

MATEJČEK, Z. (1992). *O jistotě a bezpečí (psychologická úvaha).* In Sborník ze 4. konference o náhradní rodinné péči (pp. 80-86). Praha: MPSV ČR.

PAVELKOVÁ, I. (2002). *Motivace žáků k učení : Perspektivní orientace žáků a časový faktor v žákovské motivaci.* Praha: Univerzita Karlova v Praze – Pedagogická fakulta.