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(RECOMMENDED CITATION)

THE ROLE OF SELF MOTIVATION IN THE AFFECTIVITY OF HUNGARIAN AND TRANSYLVANIAN STUDENTS AGED 11-18 FOR PHYSICAL EDUCATION AT SCHOOL

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ABSTRACT. One of the most significant factors of school education is motivation and motivating. In this study, motivation is not primarily looked at as a psychological phenomenon but much rather as a question of learning physical education or learning as a whole process at school. Applying the self-motivation questionnaires used in psychological tests we endeavour to find answers to our hypotheses which state that student-motivating factors in the process of the acquisition of physical education at school such as performance, determination, tenacity, reliability, love of comfort, a desire to relax, search for distraction or taking no risk are present to a large extent and are interrelated. Our further hypothesis is whether the motivational factors, mentioned above, are subject to gender as well as age. The sample tested comprised 3941 students, comprising 2840 boys and girls from Hungary and 1101 boys and girls from Transylvania. The method of a cross-sectional design was based on a survey by employing questionnaires. This self-report measures on motivation consisted of 36 questions, by which subjects were assessed on a five-point Likert-scale. Our test hypotheses have been validated in the case of both Hungarian and Transylvanian students because during the process of acquiring physical education at school, a dominant role is played by the factors examined by us and they are interrelated. In addition, motivating factors playing a significant role in physical education classes manifest themselves typically in relation to gender and age.

***Keywords*:** self motivation, physical education, Hungarian and Transylvanian Students

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Introduction

One of the tendencies characterizing the changes taking place in the field of pedagogical research in the 21st century is the focus on affective factors. This is shown by the fact that more and more attention is given to the examination of emotional-volitional dimensions which influence effective learning and determine performance (Csapó, 2000). One of the most significant factors of school education is motivation and motivating.

Generally speaking, *motivation* is a generic term referring to the background and drives of human actions. It is responsible for activating behaviour, guiding and sustaining it until a goal-directed behaviour results in the gratification of motivation. If that happens, we talk about conditions of pleasure, satisfaction, indifference or saturation. Classical approach makes a distinction between two basic types of human-specific motivation: *extrinsic* and *intrinsic* motivation. The former contains drives the aim of which is to satisfy a desire, to gain some profit or perhaps to avoid damage. This means that external factors play a role here, in fact, the action has a character typical of means. In contrast, intrinsic motivation is characterised by the fact that here the action and the pleasure involved in the action are the goals that is why the activity is self-rewarding (Szabó, 2004).

The motivational background of a particular action is often complex, it is shaped by both extrinsic and intrinsic drives. Today, the view that human-specific drives are motivated either extrinsically or intrinsically cannot be adhered to. It is much more typical to find different combinations of the two types of motivation (Pintrich and Schunk, 1996).

For our topic (see self-motivation), relevant points include human-specific intrinsic drives, i.e. competence motivation, interest and performance drive. *Competence motivation* can be observed in childhood, mainly in the form of playfulness (observation, grabbing hold, crawling, walking, attention, language and thinking, learning about new objects, shaping one's own surroundings, etc.), later manifestations are based on these. *Interest* is a special case of intrinsic motivation, which is typically an object-bound drive of behaviour. Interest can be significantly influenced by external factors. Typically, it involves positive emotions, which is not always the case with intrinsic motivation (Hidi, 2000).

In physical education and sports activities, immense significance is attached to the so-called *performance motivation*. In his theory, Atkinson (1993) breaks down performance motivation into three components.

These are:

- motivations: drives to achieve success and to avoid failure,
- the subjective likelihood of success/failure (the difficulty of a given task),
- the attraction of achieving/avoiding a goal.

Success orientation and *failure avoidance* are drives present at the same time. However, there are significant individual changes according to whether the desire to achieve success or the drive to avoid failure assumes the central role in an achievement-driven situation. A given motivation is determined by the fact whether the motivation of success orientation or that of failure avoidance is stronger in a situation in which a task needs to be performed. A success-oriented person is primarily motivated to act by potential success. This person is even willing to take (realistic!) risks in challenging situations. People with a failure-avoiding character have a stronger desire to avoid failure than their hope to achieve success so the level of motivation to perform is lower (Szabó, 2004).

Dishmann and Sallis (1994) in their study are intending to answer what might motivate a child to do regular physical activity and how this can be influenced. Among others, psychological, biological, behavioural and socio-demographic characteristics are mentioned. They specifically mention self-motivation, attitude and preference as factors which play a significant role in this area (Dishmann and Sallis, 1994).

Regarding to motivation in schools, the most important question is how to educate children, to make sure they wish to possess intrinsic motivation and a desire to learn, furthermore gaining knowledge. From this pedagogical point of view, the most important aim is to be able to employ effective motivation to make children act out of keen interest. Today, in the age of lifelong learning, a real pedagogical challenge is present by raising and developing children's interest, as well as their desire to learn and to do self-study (Szabó, 2004).

In school education, a motivating effect can only be achieved by developing a certain activity, event (like learning by doing), and also managing student role or teaching material interesting (i.e. by raising students' interest). In a somewhat simplistic manner we can say that keen interest makes motivation accessible to pedagogical application. This, however, does not mean that in school education raising students' interest is the only possible form of motivation. A physical education teacher can employ several other motivating means and methodological procedures, including *the formulation of realistic expectations, rewarding performance, feedback to assessment, explanation, demonstration, or assigning individual exercises,* etc. (Rétsági and Hamar, 2004).

Aims and hypotheses

In our research, motivation is not primarily looked at as a psychological phenomenon but much rather as a question of learning physical education or learning as a whole process at school. In a general approach to the issue, we are looking for the answer to the question what conditions and possibilities there are to create, sustain and enhance motivation in physical education at school. This means motivation and motivating are made the subjects of our analysis as pedagogical functions.

Our research is composed of two parts. The objective of our first questionnaire-based investigation was to examine the emotional reactions to physical education at school of students in a given age group (11-18 years) and from two regions (Hungary and Transylvania) during physical education classes. To explain it more precisely: we wished to survey the individual characteristics and defining factors of the affectivity of 11-18 year-old Hungarian (Hamar and Karsai, 2008; Hamar, Karsai and Munkácsi, 2011) as well as Transylvanian (Hamar and Karsai, 2010; Hamar et al, 2011) boys and girls towards physical education through positive and negative reactions. We thought it was important to find the emotions related to physical education classes which play a defining role in the process of teaching and learning physical education.

Applying the self-motivation questionnaires (Dishman and Ickes, 1981) used in psychological tests we assumed that we would receive reinforcement of the results of our survey examining emotional reactions. We would like to investigate if achievement orientation, tenacity, reliability, love of comfort, fun seeking or avoidance of risk taking are present to a large extent in pupils and whether these factors are interrelated or not. Our further hypothesis is whether the motivational factors, mentioned above, are subject to gender as well as age.

As a further objective of the research we wished to explore the role of self-motivation in the affectivity towards physical education at school not only in Hungary but also in Transylvania, a unique part of Europe in respect of body culture as well. We had two reasons for selecting this location. Firstly, because very little research of this kind has been carried out there. Secondly, because that geographical area has unique socio-cultural features. This also means that relationships between Hungarian and Transylvanian students are also examined.

Subjects and methods

Participants

Data were collected from a randomly-selected population, i.e. Hungarian and Transylvanian male and female students between the ages of 11-18. The sample tested comprised 3941 students, comprising 2840 boys and girls from Hungary and 1101 boys and girls from Transylvania. Distribution of students according to sex and age is shown in Table 1.

Data collection of Hungary took place in 5 schools in Budapest as well as 21 schools in the country. The following schools, from settlements beside the capital city, took part in the study: Balatonboglár (Somogy county); Berettyóújfalu (Hajdú-Bihar county); Békéscsaba (Békés county); Gamás (Somogy county); Győr (Győr-Moson-Sopron county); Gyula (Békés county); Hajdúhadház (Hajdú-Bihar county); Jászberény (Jász-Nagykun-Szolnok county); Kistarcsa (Pest county); Látrány (Somogy county); Szentendre (Pest county); Szombathely (Vas county);

Tokodaltáró (Komárom-Esztergom county). The institutes of education included primary schools, primary and secondary grammar schools, Catholic primary and secondary grammar schools, primary and music schools, primary and secondary technical schools, secondary grammar schools, secondary technical schools, secondary technical and grammar schools, vocational schools and boarding vocational schools.

Table 1.

Distribution of subjects tested according to gender, age and geographical unit (per capita)

	Gender/Age	*11-12 years*	*13-14 years*	*15-16 years*	*17-18 years*	*Total*
Hungarian	Boys	244	359	517	247	1367
	Girls	304	387	519	263	1473
	Total	**548**	**746**	**1036**	**510**	**2840**
Transylvanian	Boys	88	130	89	104	411
	Girls	102	156	190	242	690
	Total	**190**	**286**	**279**	**346**	**1101**
Hungarian and Transylvanian	**Total**	**738**	**1032**	**1315**	**856**	**3941**

Data collection of Transylvania took place in six schools in Arad and in Odorheiu Secuiesc. Educational institutions participating in the tests included Elena Ghiba Birta National College, Csiky Gergely School Group, Generalà No. 4 „Ioan Slavici", Liceul de Artà „Sabin Dràgoi", Liceul Pedagogic „Dimitrie Tichindeal" and Eötvös József Agricultural Secondary Technical School.

Instruments

The method of a cross-sectional design was based on a survey by employing questionnaires. This self-report measures on motivation consisted of 36 questions, by which subjects were assessed on a five-point Likert-scale (see Appendix). This questionnaire has already been used by Bíróné (1994) during some of her research. The original questionnaire was developed by Dishman and Ickes (1981), later modified by Svoboda and Jansa (1987). Data collection took place in the academic year 2006/2007 with the assent of school directors as well as in cooperation with PE teachers.

Data analysis

The 36 questions of self motivation formed six factors (F). The six self-motivation factors were assigned letter codes (which follow each factor):

1. Achievement orientation (Fv)
2. Tenacity (Fc)

3. Reliability (Fs)
4. Love of comfort (Fp)
5. Fun seeking (Fr)
6. Avoidance of risk taking (Fbr)

Six items belong to each factor that are the following: Fv - 3., 18., 19., 29., 33., 36.; Fc - 5., 9., 20., 21., 27., 35.; Fs - 6., 10., 12., 15., 23., 24.; Fp - 4., 14., 17., 22., 25., 32.; Fr - 1., 2., 7., 8., 26., 30.; Fbr - 11., 13., 16., 28., 31., 34.

The dominant inclination (aptitude) of the personality could be determined with the aid of the questionnaire. The first three factors (achievement orientation, tenacity and reliability) represented positive motivation, while for love of comfort, fun seeking and avoidance of risk taking factors represented negative motivation towards competition and performance.

Thus, the factors involving positive and negative motives do not contrast or are not opposite of each other, but located on a certain continuum. Each factor has a distinct quality. Regarding the variety of negative as well as positive answers in the questionnaire, data were homogenized before being processed on the computer. Regarding three reverse scored factors (Fp, Fr, Fbr), where value 1 demonstrated a negative answer, values were reversed, as value 1 became 5, value 2 became 4, and so on. Value 3, of course, remained the same.

Following descriptive statistical analysis, we performed a three-way analysis of variance (2*2*4 between-subjects ANOVA, region*gender*age group) and Bonferroni Post Hoc test was employed in order to examine the differences between genders (female, male) and age groups (students are allocated in age groups of 11-12, 13-14, 15-16, 17-18). To investigate the distribution of factor values (Fv, Fc, Fs, Fp, Fr and Fbr) among the individual groups, Kolmogorov Smirnov test was computed while homogeneity among groups was determined by the Leven's test. Differences were significant if the criterion value of $p<0.05$ was achieved. The statistical analyses were performed in the SPSS v.20 software package (SPSS Inc., Chicago, Illinois, USA).

Results

Based on the results of distribution tests according to region, gender, age groups as well as the examination of the homogeneity of variances between groups we have drawn the conclusion that our data met the requirements of employing parametric statistics.

In the case of Hungarian students as a general conclusion, we can say that factors of positive characters (Fv, Fc and Fs) that were related to physical education as a manifestation of physical activity, had a higher value with respect to both girls and boys (see Table 2) than factors of negative characters (Fp, Fr and Fbr) while dispersion values (SD) remained relatively low.

Table 2.

Descriptive statistical data of Hungarian students according to gender and age

	11-12 years				13-14 years				15-16 years				17-18 years			
	Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Fv	3,32	0,74	3,48	0,74	3,30	0,76	3,21	0,68	3,35	0,71	3,18	0,67	3,39	0,65	3,24	0,72
Fc	3,35	0,54	3,29	0,58	3,25	0,57	3,24	0,52	3,28	0,48	3,23	0,48	3,27	0,44	3,22	0,43
Fs	3,44	0,64	3,53	0,60	3,34	0,61	3,37	0,59	3,42	0,56	3,36	0,54	3,38	0,61	3,33	0,54
Fp	2,65	0,76	2,57	0,63	2,78	0,72	2,85	0,61	2,72	0,61	2,91	0,66	2,72	0,59	2,94	0,57
Fr	2,77	0,76	2,81	0,72	2,91	0,72	2,95	0,60	2,87	0,66	3,11	0,62	2,89	0,61	3,03	0,60
Fbr	3,04	0,79	3,02	0,73	3,00	0,76	3,13	0,64	3,02	0,64	3,19	0,65	2,96	0,62	3,16	0,66

As a general conclusion with Transylvanian students we can say that factors of a positive (Fv, Fc and Fs) character which are related to physical education as a manifestation of physical activity as well as risk avoidance (Fbr) as a factor of negative character had higher values with both girls and boys than factors with a negative character such as love of comfort (Fp) and a desire to relax or search for distraction (Fr) (Table 3).

Table 3.

Descriptive statistical data of Transylvanian students according to gender and age

	11-12 years				13-14 years				15-16 years				17-18 years			
	Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Fv	3,08	,71	3,11	,67	3,18	,69	3,18	,61	3,29	,62	3,22	,61	3,34	,62	3,29	,57
Fc	3,33	,68	3,43	,61	3,29	,61	3,44	,52	3,30	,52	3,51	,53	3,37	,57	3,43	,51
Fs	3,30	,75	3,34	,65	3,22	,71	3,54	,62	3,45	,57	3,52	,49	3,40	,65	3,50	,56
Fp	2,72	,71	2,88	,67	2,78	,69	2,88	,72	2,72	,62	2,80	,65	2,93	,73	2,83	,57
Fr	2,96	,71	3,08	,64	3,17	,61	3,09	,62	3,03	,53	3,12	,57	2,99	,71	3,01	,54
Fbr	3,31	,76	3,26	,71	3,25	,67	3,28	,63	3,31	,75	3,44	,66	3,24	,64	3,33	,58

As regards the factor of performance orientation (Fv), when comparing the Hungarian and Transylvanian results according to sex and age groups the most significant difference with boys is found in the age group of 13-14 year-olds (Figure 1) whereas with girls, it is found with 11-12 year-olds (Figure 2). The most conspicuous difference is seen with 11-12 year-old girls.

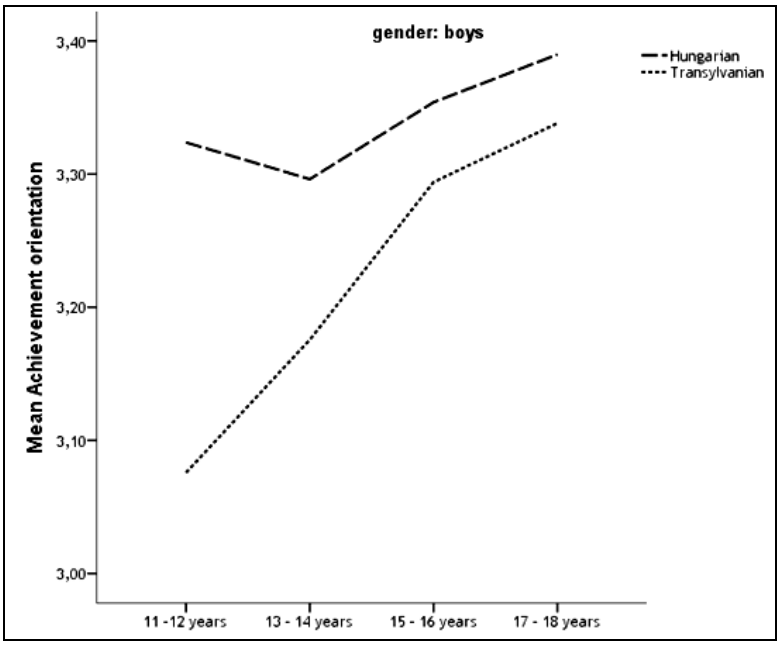

Figure 1. The mean values of factor "Fv" of Hungarian and Transylvanian boys students according to gender and age groups

As regards the determination or tenacity factor (Fc), with the exception of 11-12 year-old boys there exist large differences with both sexes and all age groups (Figures 3 and 4). In every age group, lower values are present for Hungarian girls than for Transylvanian ones. In striking contrast to this, the trend is reversed with boys, i.e. Hungarian boys show higher values up to the age of 17-18 years where, however, Transylvanian boys have higher values.

With the reliability (Fs) factor, the picture is more complex in the case of girls (Figure 6). There are significant differences between Hungarian and Transylvanian girls for every age group. However, while this value is higher for Hungarian girls with the age group of 11-12, in all other age groups it is higher with Transylvanian girls. With the exception of 13-14 year-olds, boys (Figure 5) indicate the same trend.

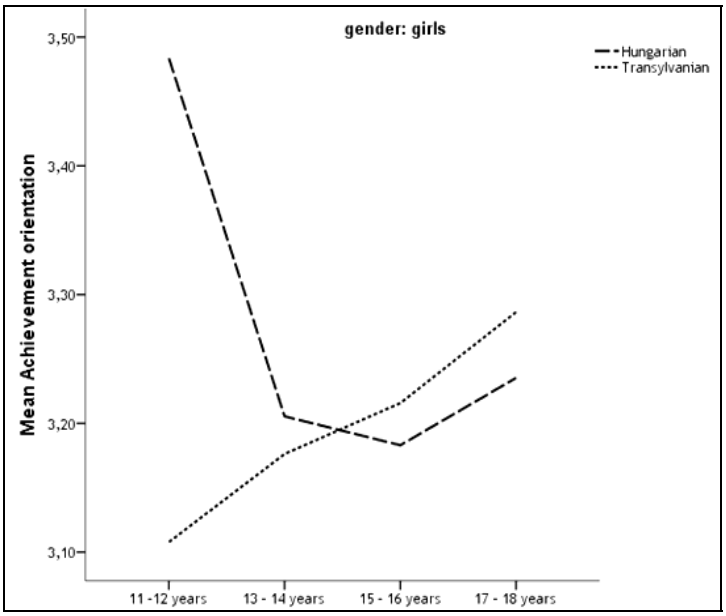

Figure 2. The mean values of factor "Fv" of Hungarian and Transylvanian girls students according to gender and age groups

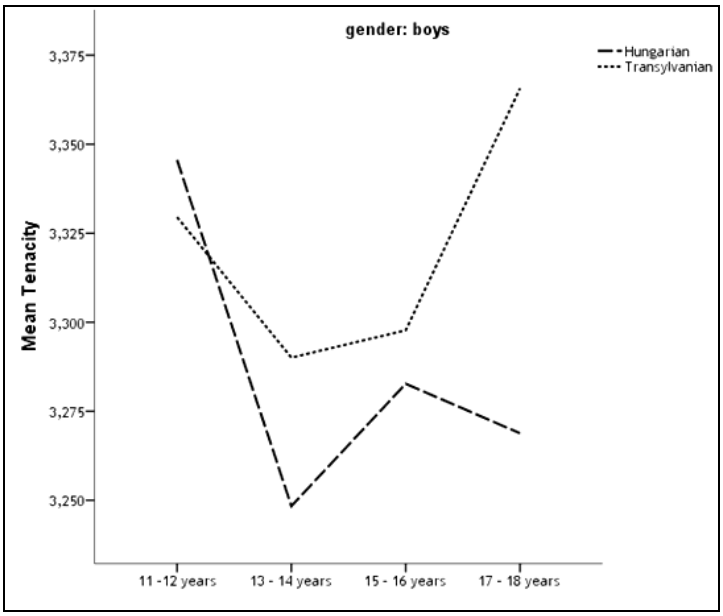

Figure 3. The mean values of factor "Fc" of Hungarian and Transylvanian boys students according to gender and age groups

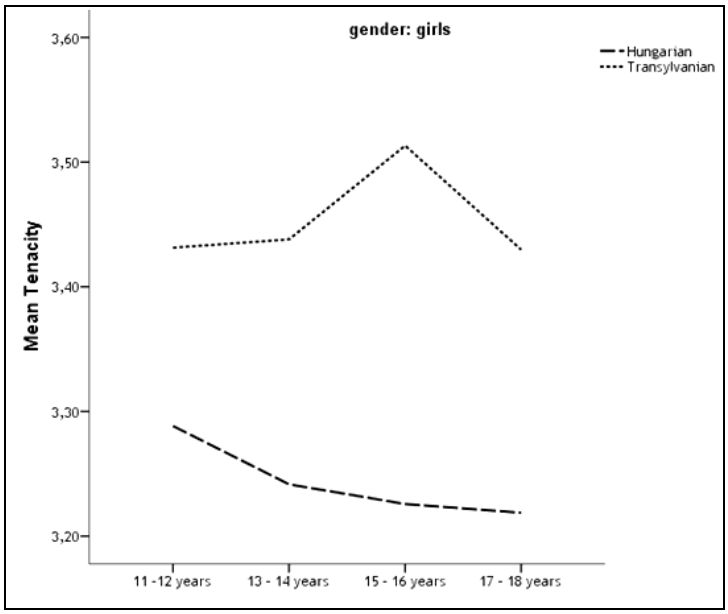

Figure 4. The mean values of factor "Fc" of Hungarian and Transylvanian girls students according to gender and age groups

Figure 5. The mean values of factor "Fs"of Hungarian and Transylvanian boys students according to gender and age groups

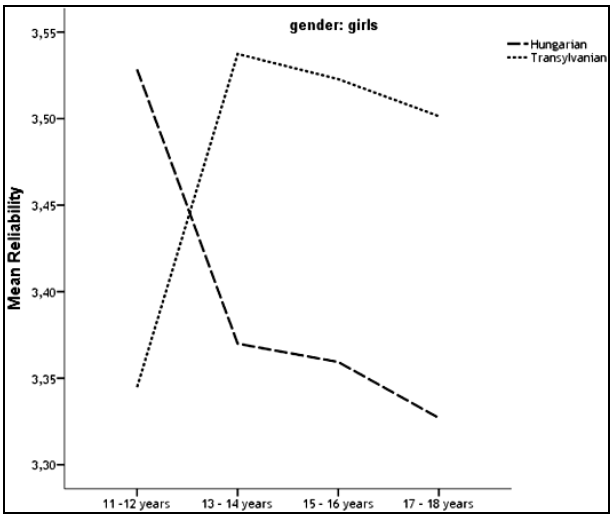

Figure 6. The mean values of factor "Fs" of Hungarian and Transylvanian girls students according to gender and age groups

As regards the love of comfort (Fp) factor, both boys (Figure 7) and girls (Figure 8) show nearly the same values – with some minor differences. There are two significant differences between the two genders, notably with the 17-18 year-olds in the case of boys and with the 11-12 year-olds in the case of girls. Both local values are higher for Transylvanian students.

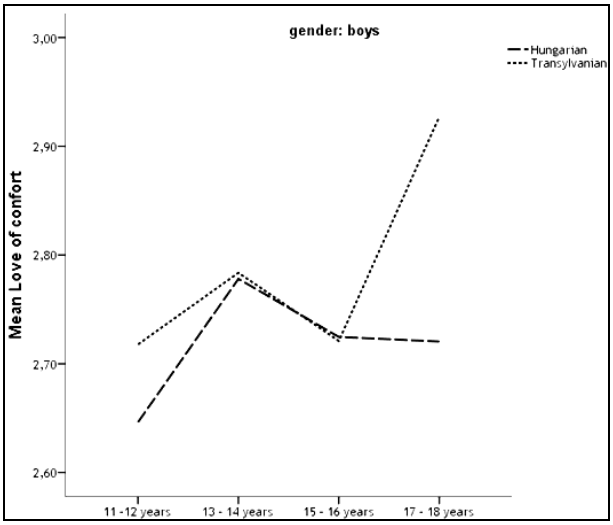

Figure 7. The mean values of factor "Fp" of Hungarian and Transylvanian boys students according to gender and age groups

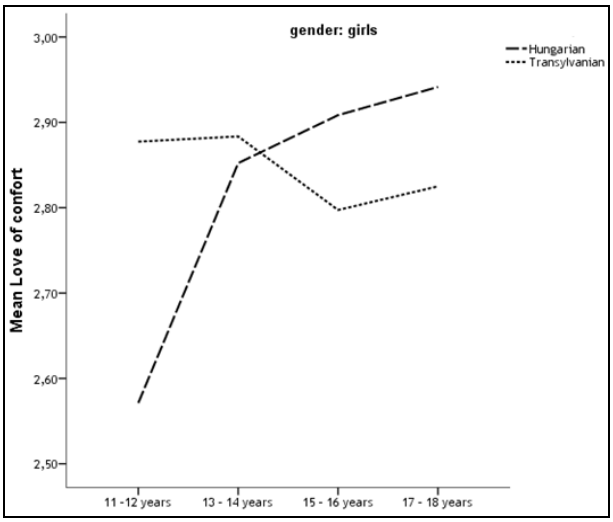

Figure 8. The mean values of factor "Fp" of Hungarian and Transylvanian girls students according to gender and age groups

The test results show that with the desire to relax or search for distraction factor (Fr factor) significant differences (Figure 10) are only present with younger, i.e. with 11-12 and 13-14 year-old Hungarian and Transylvanian girls. Boys (Figure 9) are basically on the same level, with minor deviations from either one or the other area.

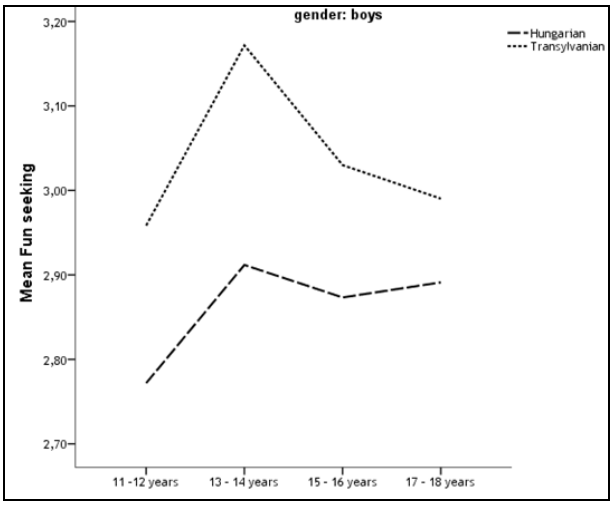

Figure 9. The mean values of factor "Fr" of Hungarian and Transylvanian boys students according to gender and age groups

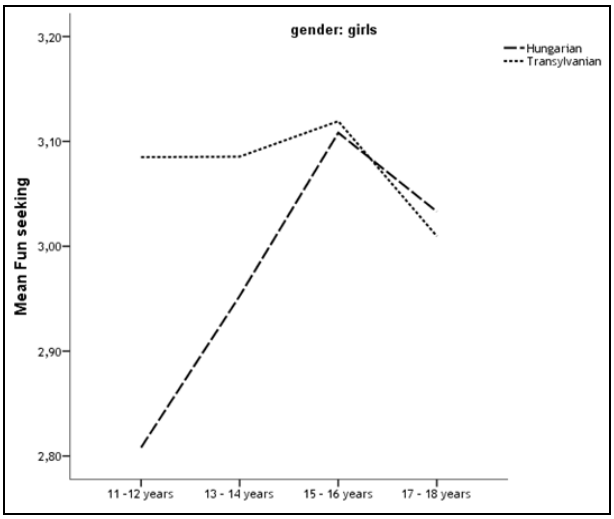

Figure 10. The mean values of factor "Fr" of Hungarian and Transylvanian girls students according to gender and age groups

With the risk avoidance (Fbr) factor, the chart for girls (Figure 12) shows a resemblance to the tenacity factor (Fc), which means that lower values are present in all age groups for Hungarian girls than for Transylvanian ones. Regarding to boys' values (Figure 11), there are no major differences up to the age group of 17-18 year-olds, in which age Transylvanian boys take on significantly higher values.

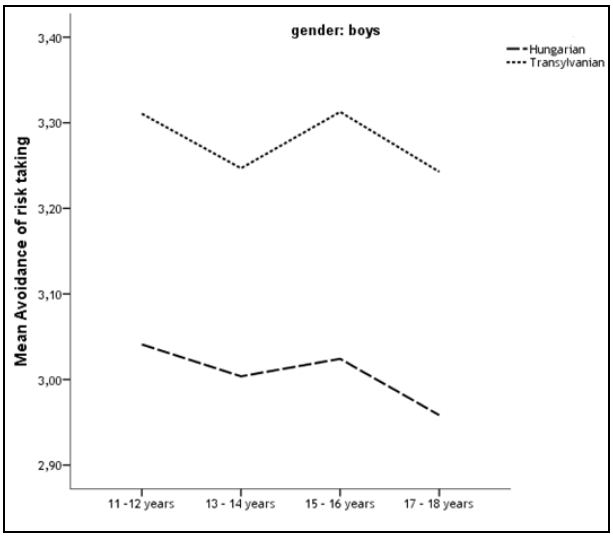

Figure 11. The mean values of factor "Fbr" of Hungarian and Transylvanian boys students according to gender and age groups

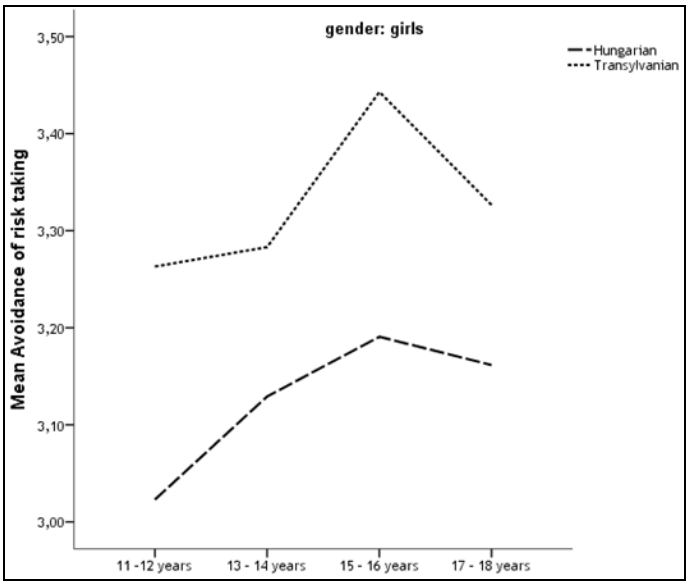

Figure 12. The mean values of factor "Fbr" of Hungarian and Transylvanian girls students according to gender and age groups

Based on the results (Table 4) of the three-sample analysis of variance and those of the Bonferroni Post Hoc test we can conclude that within the categories of sexes (boys, girls) and age groups (11-12, 13-14, 15-16, 17-18 year-old students) the geographical areas in question (Hungary, Transylvania) display the largest number of significant differences – notably five – with Fp (love of comfort) and Fr (desire to relax, search for distraction) factors while the smallest number of differences – notably two – can be found with the Fbr (risk avoidance) factor.

Table 4.

Results of the between-subjects ANOVA test

	Region	Gender	Age group	Region*Age group	Region*Gender	Gender*Age group	Region*Age group*Gender
Fv	***	**	NS	***	NS	**	NS
Fc	***	NS	**	NS	***	NS	NS
Fs	NS	NS	**	***	**	*	NS
Fp	*	***	***	**	NS	NS	***
Fr	***	***	***	*	NS	*	NS
Fbr	***	NS	***	NS	NS	NS	NS

*= p<0,05; **=p<0,01; ***=p<0,001

Summary and conclusions

During our research we examined the level of self-motivation and its composition on the basis of self-esteem. A dominant factor of self-esteem is the assessment of participation in a given activity. The procedure we applied set the aim for the subjects tested to assess themselves regarding to the attitude of their own personality by answering the questions while making judgements. This method of testing proved to be a favourable methodology for physical education, which is based on active exercise in a task-oriented way (see also Bíróné, 1994). Our results showed an overwhelmingly positive self-motivation.

Our test hypotheses have been accepted both for Hungarian and Transylvanian students because the results of our questionnaire testing emotional reactions have been reinforced (see Hamar and Karsai, 2008; Hamar and Karsai, 2010). During the process of acquiring physical education at school, we uncovered that a dominant role is played by the factors that were examined and they are interrelated. In addition, motivating factors playing a significant role in physical education classes manifest themselves typically in relation to gender and age.

It was revealed by age groups that both in Hungarian and Transylvanian participants, the positively characterised factors (achievement orientation, self-determination, perseverance and reliability) in self-evaluation are dominant qualities. In Hungarian students the positively characterised factors (Fv, Fc, Fs) have shown higher values in both genders, than the negative factors (Fp, Fr and Fbr). In Transylvanian students the same trend has emerged, only risk avoidance (Fbr) - as it's having negative content - factor also has shown higher value, than the Fp and Fr labelled negative content factors. The Transylvanian data of the risk avoidance factor are somewhat surprising, as the investigated age group is rather seeking for risks, undertaking risks, than avoiding them. The suspected explanation can be due to the curriculum selection and/or teaching method procedure of the physical education teachers in the investigated schools. Our results demonstrate gender differences in connection with pubertal development, which is similar to the age groups examined by us, and the emerging and maturing personality profile.

Our results on self-motivation are directly related to the image we have had about the affective characteristics of physical education at school and about students' attitudes in as much as – basically positive – emotional bonding with physical education is based on performing tasks, successful achievement and trust in oneself – even with a higher level of risk taking and excitement.

In conclusion, we can draw from our test results that by pooling the attitudes of Hungarian and Transylvanian students, as well as their emotional components and their self-motivation, we can state that the way they affect each other displays mutually strengthening tendencies. And this provides a reassuring background for teaching and learning physical education as one of the most important driving factors for physical activity.

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APPENDIX

Questionnaire of self-motivation

Gender: Boy – Girl **Age:**

Instructions: Read the sentences below and circle the number that describes you best. Answer honestly according to the scale below. There is no right or wrong answer. Your answers will remain confidential.

1 Not like me at all
2 Not like me
3 Not like me, not unlike me
4 Somewhat like me
5 Very much like me

1.	I am not very good at committing myself to doing more things at a time.	1	2	3	4	5
2.	Mostly I am able to work with greater effort than other people (my mates).	1	2	3	4	5
3.	I can persevere at stressful tasks, even when they are tiring and unpleasant.	1	2	3	4	5
4.	If an activity is too demanding I prefer giving it up.	1	2	3	4	5
5.	Self-discipline is very important for me.	1	2	3	4	5
6.	I keep promises, especially the ones I made to myself.	1	2	3	4	5
7.	I do not work harder than I have to.	1	2	3	4	5
8.	I rarely exert myself to the max.	1	2	3	4	5
9.	I haven't got goals.	1	2	3	4	5
10.	When I make up my mind to do something, I always bring it to an end.	1	2	3	4	5
11.	I tend to do things until they are not tiring.	1	2	3	4	5
12.	I often make decisions and stick to them.	1	2	3	4	5
13.	I always seek the easiest solution.	1	2	3	4	5
14.	I'm easily discouraged.	1	2	3	4	5
15.	If I tell someone that I do something, he may be sure that I will do it.	1	2	3	4	5
16.	I hate getting tired.	1	2	3	4	5
17.	I am more or less a lazy individual.	1	2	3	4	5
18.	I work harder than most of my friends.	1	2	3	4	5
19.	I can persist in spite of pain and discomfort.	1	2	3	4	5

20. I like setting goals and working for them.	1	2	3	4	5
21. Sometimes I make myself more tired than I should.	1	2	3	4	5
22. I tend to lose my enthusiasm.	1	2	3	4	5
23. I rarely give it up.	1	2	3	4	5
24. I am not very reliable.	1	2	3	4	5
25. I prefer tasks where I have to fight for the solution.	1	2	3	4	5
26. I easily change my mind.	1	2	3	4	5
27. I do not tire myself if I do not have to.	1	2	3	4	5
28. I avoid difficult situations.	1	2	3	4	5
29. I often tire myself on completely.	1	2	3	4	5
30. I prefer action to planning.	1	2	3	4	5
31. I never force myself to do things that I do not like.	1	2	3	4	5
32. It takes a lot of persuading to induce me to do something.	1	2	3	4	5
33. When I reach a goal, I set a higher one.	1	2	3	4	5
34. If I do not succeed, I still do not give it up.	1	2	3	4	5
35. I always try to reach my goals.	1	2	3	4	5
36. I usually do what I want to do, and not what I'm told to do.	1	2	3	4	5