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Editorial Contact Information,  
Publisher Contact Information:  
Inta Bula-Biteniece  
Latvian Academy of Sport Education  
Address: 333 Brivibas Street  
Riga, LV1006, Latvia  
Phone.: +371 67543410  
Fax: +371 67543480  
E-mail: [akademija@lspa.lv](mailto:akademija@lspa.lv)

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**ORIGINAL RESEARCH PAPER**

**COMPARISON OF ATTITUDE TOWARDS  
COMPULSORY PHYSICAL ACTIVITY AT THE  
UNIVERSITY AMONG STUDENTS FROM LATVIA AND  
BELARUS IN THE CONTEXT OF EXPERIENCE IN  
PHYSICAL EDUCATION**

**Eleonora Šišlova<sup>1</sup>, Andra Fernāte<sup>2</sup>, Valery Dunay<sup>3</sup>**

<sup>1</sup>Riga Technical University, Sports Department,  
Address: 1 Meža Street, Riga, LV-1650, Latvia  
Phone: + 371 29128033

E-mail: [esislova@gmail.com](mailto:esislova@gmail.com)

<sup>2</sup>Latvian Academy of Sport Education,  
Address: 333 Brivibas street, Riga, LV-1006, Latvia  
Phone: +371 67543373

E-mail: [andra.fernate@lspa.lv](mailto:andra.fernate@lspa.lv)

<sup>3</sup>Belarusian State University of Physical Training,  
Address: 105 Pieramozhcau Avenue, Minsk, 220020, Belarus  
Phone: +375 17 369 70 08  
E-mail: [dunay\\_wal@bk.ru](mailto:dunay_wal@bk.ru)

**Abstract**

*Students' attitude towards compulsory physical activity at the university has not been extensively studied in the context of their experience in physical education and existing multiple interpretations of criteria for assessing the experience in physical education. The goal of the research is – to determine the attitude towards compulsory physical activity at the University of University Students from Latvia and Belarus by assessing their experience in physical education, determining the indicator “Students' experience in physical education” based on the attitude criteria of the Theory of Planned Behaviour (TPB). The questionnaire involved 145 students (20.3±1.9) from the Riga Technical University and 111 students (19.1±1.1) from the Belarusian State University of Physical Training from the Faculty of Tourism and Hospitality. Methods: The T-test was used for independent and dependent samples, as well as factor analysis, correlation analysis, and linear regression. Results: In both countries, a scale based on*

*the TPB criteria measures the indicator “Students’ attitude towards physical education” at all school periods. The indicator “Students’ experience in physical education” can be assessed according to the developed TPB attitude criteria. The results show a statistically significant correlation between the experience in physical education gained at high school and the students’ attitude towards compulsory physical activity at the university*

**Key words:** *attitude, compulsory physical activity at university, experience, physical education, university students*

## **Introduction**

Similarly to the rest of the world, for a significant part of students in Latvia and Belarus physical activity during leisure is lower than the recommended level (Vecenāne & Fernāte, 2012; Сулейманова, 2017), despite the fact that the improvement and preservation of health is the main motivating factor for physical activity in both Latvia and Belarus: in Belarus, students are aware of the impact of physical activity on health, and in Latvia, 82% of students have a positive attitude towards physical activity (Studentu un jauniešu sportošanas paradumi, 2012; Шаповалова & Врублевская, 2012). However, students list lack of time as the main obstacle to its implementation in everyday life (Ābele, 2014; Сулейманова, 2017).

After the restoration of independence in Latvia, compulsory physical activity at the university is not prescribed by the Law on Institutions of Higher Education, but at two higher education institutions physical activity is still compulsory for the first-year students (Studentu un jauniešu sportošanas paradumi, 2012). Nonetheless, compulsory physical activity has been preserved at universities in Belarus. The organization of such activity eliminates the obstacles to being physically active at the university; however, in both countries up to 50% of students show indifferent or negative attitude towards compulsory physical activity at the university (Koroļova, 2010; Šišlova & Fernāte, 2016; Vecenāne & Fernāte, 2012; Коледа & Новицкая, 2015; Сакович & Кузьмицкая, 2017; Шаповалова & Врублевская, 2012). It has been determined the attitude towards physical education is deteriorating (Carcamo et al., 2016; Subramaniam & Silverman, 2007), which, according to our assumption, may influence the attitude towards sport activity at the university.

Taking into account the above, as well as the fact that attitude is the beliefs and conviction that is related to experienced emotions and is formed in life experience and knowledge acquisition (Ghanji, 2001; Karimi, 1998; Špona, 2004), one might think about the negative experience during

physical education, which are included in the general education curriculum, as the negative experience in physical education was mentioned as an obstructive factor for participation in physical activity for both adolescents and youth, as well as adults (Allender et al., 2006; Beltrán-Carrillo et al., 2012; Brooks & Magnusson, 2006; Cardinal et al., 2013; Lewis, 2014; Streat, 2009; Subramaniam & Silverman, 2007). Students with a negative experience in physical education do not regularly attend the compulsory physical activity at the university and sometimes submit unjustified exemptions from physical activity (Šišlova & Fernāte, 2017). In study by B.Cardinal, Yan & M.Cardinal, (2013) about negative experiences in physical activity, was told that the people' accumulated experience, both good and bad, helps to shape their attitude and behaviour, feelings associated with experience are preserved as memories.

There is no common approach to determining the criteria of experience in physical education and physical activity and they have been identified as motivating or demotivating factors for the participation or absence of students, youth and adults in physical education and physical activity, interpreting the interviews according to the Self Determination Theory (SDT), Social Cognition Theory (SCT) and the TPB (Allender et al., 2006; Brooks & Magnusson, 2006; Beltrán-Carrillo et al., 2012, Cardinal et al., 2013; Lewis, 2014; Streat, 2009). The found criteria have not been established as the criteria defining the experience in sport. However, the TPB six semantic differentials *Useless/Useful; Negative/Positive (Bad/Good); Harmful/Beneficial; Unenjoyable/enjoyable; Undesirable/Desirable; Boring/Interesting* are applied around the world to determine the attitude towards physical activity and physical education (Baker et al., 2003; Gucciardi & Jackson, 2015; Gulley & Boggs, 2013). It is important physical education should be meaningful (Subramaniam & Silverman, 2007). The importance of the criterion "*Benefits*" has also been noted in other studies where TPB was not applied (Šišlova & Fernāte, 2015). Despite the fact that the use of TPB criteria is widespread throughout the world for the assessment of attitude towards physical education, the practice of TPB application is less prevalent in Easter Europe, as it requires a test adoption or development of a test according to the theory, which is a sufficiently complicated process related to the test validation check.

Students' attitude towards compulsory physical activity at the university has not been extensively studied in the context of their experience in physical education and existing multiple interpretations of criteria for assessing the experience in physical education. The aim of study is to determine the attitude towards compulsory physical activity at the University of University Students from Latvia and the Republic of Belarus

by assessing their experience in physical education at school, determining the indicator “*Students’ experience in physical education*” based on the TPB attitude criteria.

## Material and methods

The pilot research involved 145 students (72 women and 73 men) aged from 18 to 25 ( $20.3 \pm 1.9$ ) from the Riga Technical University (RTU), for whom sport activity was compulsory in the first study year, 111 students (57 women and 54 men) aged from 18 to 23 ( $19.1 \pm 1.1$ ) from the Belarusian State University of Physical Training (BSUPT) from the Faculty of Tourism and Hospitality, where subjects of the study programme are not sport related. In Belarus, physical activity is compulsory for 3 academic years for all students in all universities. RTU and BSUPT students had practically the same opportunities to choose sports: aerobics, athletic gymnastics, curative gymnastics, basketball, box, wrestling, swimming, track and field athletics, and volleyball. Students were offered to fill in the questionnaire voluntarily and anonymously in the presence of the researcher.

For the assessment of students’ attitude towards physical education at primary school (grades 1 – 4), secondary school (grades 5–9) and high school (grades 10 – 12), an affirmation was formulated, which includes 6 specially developed criteria based on the TPB attitude semantic differentials - *Useless/Useful; Harmful/Beneficial; Unenjoyable/Enjoyable; Undesirable/Desirable; Boring/Interesting* (Baker et al., 2003; Gulley & Boggs, 2013; Gucciardi & Jackson, 2015), that physical education should be meaningful (Subramaniama & Silverman, 2007):

“*Please, assess whether the sport classes*” (according to a 5-point scale: 1 – strongly disagree, 2 – disagree, 3 – undecided, 4 – agree, 5 – strongly agree):

<b>1. Were useful;</b>	<b>2. Were meaningful;</b>	<b>3. Gave benefits;</b>
<b>4. Gave a sense of joy;</b>	<b>5. Were desirable;</b>	<b>6. Were interesting</b>

The criteria were assigned the following titles: “*Useful*”, “*Meaningful*”, “*Benefits*”, “*Enjoyable*”, “*Desirable*”, “*Interesting*”.

To determine whether students’ experience in physical education can be assessed according to the TPB attitude criteria, as well as the direct measurement of students’ attitude towards physical education, the method for simultaneously determining criteria validation was applied, when comparing the questions using correlation coefficient (Culbertson, Weychrauch & Huffcutt, 2017). For this purpose, in parallel to the TPB criteria question, the questionnaire also included the following direct questions: “*How do you assess your attitude towards physical education at primary school, secondary school and high school?*”; “*How do you assess*

*your experience in physical education at primary school, secondary school and high school?"* (According to a 5-point scale: 1 – very negative, 2 – negative, 3 – neutral, 4 – positive, 5 – very positive). In Latvia, the questions were asked in Latvian, in Belarus – in Russian. To determine whether the questions in both languages form the same structure, the principal axis factoring (PAF) of factor analysis was applied, which allows to obtain a more accurate solution in alignment measuring scale with theory (Dombrowski, McGill & Canivez, 2017).

For the analysis of results, descriptive statistics was used – arithmetic mean, standard deviation, and conclusive statistics – T-test for independent samples, paired sample T-test, factor analysis, regression analysis, Pearson correlation analysis. For the behavioural sciences, Cohen's standard (Cohen et al., 2003) will be used to evaluate the correlation coefficient to determine the strength of the relationship, or the effect size, where correlation coefficients between 0.10 and 0.29 represent a small association, coefficients between 0.30 and 0.49 represent a medium association, and coefficients of 0.50 and above represent a large association or relationship. The statistical significance criteria  $p < 0.05$ . The results were processed using the Statistical Package for the Social Sciences (SPSS) version 23.0.

## Results

In Latvia and Belarus at the beginning of studies at the university, the students' attitude towards physical activity was positive  $3.88 \pm 1.04$  and  $3.72 \pm 1.06$  respectively, and was not significantly different ( $p = 0.718 > 0.05$ ). It was more positive than at high school in Latvia, but in Belarus it was not change. Table 1 shows the statistical results of assessing students' attitude and experience in physical education according to the direct question, as well as evaluating students' attitude in physical education according to the TPB criteria.

**Table 1**

Students' Attitude, Experience in Physical Education According to the Direct Question, and Attitude towards Physical Education According to the TPB Criteria in Latvia and Belarus

		Primary School			Secondary School			High School		
		Mean	SD	p	Mean	SD	p	Mean	SD	p
<b>Attitude towards PE</b>	LAT	4.11	0.70	0.227	3.83	0.90	0.825	3.55	1.23	0.169
	BEL	3.98	1.00		3.82	0.96		3.72	1.02	
<b>Experience in PE</b>	LAT	3.83	0.97	0.036	3.56	1.00	1.000	3.36	1.18	0.026
	BEL	3.57	0.99		3.56	0.88		3.64	0.98	
<b>Useful</b>	LAT	3.77	1.22	0.509	3.63	1.09	0.831	3.39	1.28	0.215
	BEL	3.66	1.38		3.67	1.32		3.59	1.39	

**Table 1** countion

<b>Meaningful</b>	LAT	<b>3.51</b>	<b>1.07</b>	<b>0.736</b>	<b>3.52</b>	<b>0.94</b>	<b>0.778</b>	<b>3.37</b>	<b>1.23</b>	<b>0.658</b>
	BEL	3.56	1.20		3.56	1.00		3.44	1.34	
<b>Benefits</b>	LAT	3.54	1.20	0.078	3.54	1.07	0.028	3.33	1.23	0.666
	BEL	3.26	1.29		3.23	1.23		3.26	1.35	
<b>Enjoyable</b>	LAT	3.79	1.21	0.856	3.49	1.16	0.825	3.34	1.31	0.150
	BEL	3.77	1.18		3.52	1.20		3.57	1.25	
<b>Desirable</b>	LAT	3.74	1.16	0.044	3.35	1.13	0.009	3.30	1.25	0.002
	BEL	4.05	1.19		3.74	1.19		3.79	1.24	
<b>Interesting</b>	LAT	3.77	1.16	0.371	3.45	1.10	0.680	3.31	1.26	0.976
	BEL	3.63	1.37		3.39	1.26		3.32	1.36	

Note. PE: physical education; LAT: Latvia; BEL: Belarus.

T-test for independent samples showed, that dispersions are not significantly different (Levene's tests  $p > 0.05$ ) and the average results of attitude assessment of Latvian and Belarussian samples were not significantly different ( $p > 0.05$ ). Differences have been determined when assessing experience at primary school and high school, as well as criteria "Benefits" at secondary school, and "Desirable" at all stages ( $p \leq 0.05$ ).

The results of factor analysis showed, that a factor according to the theory was established, which measures the indicator "Students' attitude towards physical education" according to the TPB attitude criteria "Useful", "Meaningful", "Benefits", "Enjoyable", "Desirable", "Interesting" at primary, secondary and high school in both Latvia and Belarus (Table 2).

**Table 2.**

Results of Factor Analysis and the Internal consistency of the scale

		<b>Primary School</b>	<b>Secondary School</b>	<b>High School</b>
<b>Kaiser-Meyer-Olkin (KMO) Measure</b>	Latvia	0.860	0.868	0.891
	Belarus	0.805	0.796	0.794
<b>The Bartlett's Sphericity Test (BST), <math>\chi^2</math></b>	Latvia	459.707	584.462	655.192
	Belarus	661.268	587.991	622.148
<b>Extraction Sums of Squared Loadings, %</b>	Latvia	57.224	63.805	68.500
	Belarus	69.348	65.532	67.521
<b>Factor Loadings</b>	Latvia	0.652 - 0.846	0.690 - 0.868	0.759 - 0.860
	Belarus	0.722 - 0.943	0.694 - 0.947	0.693 - 0.926
<b>Cronbach Alfa</b>	Latvia	0.887	0.911	0.928
	Belarus	0.930	0.915	0.922

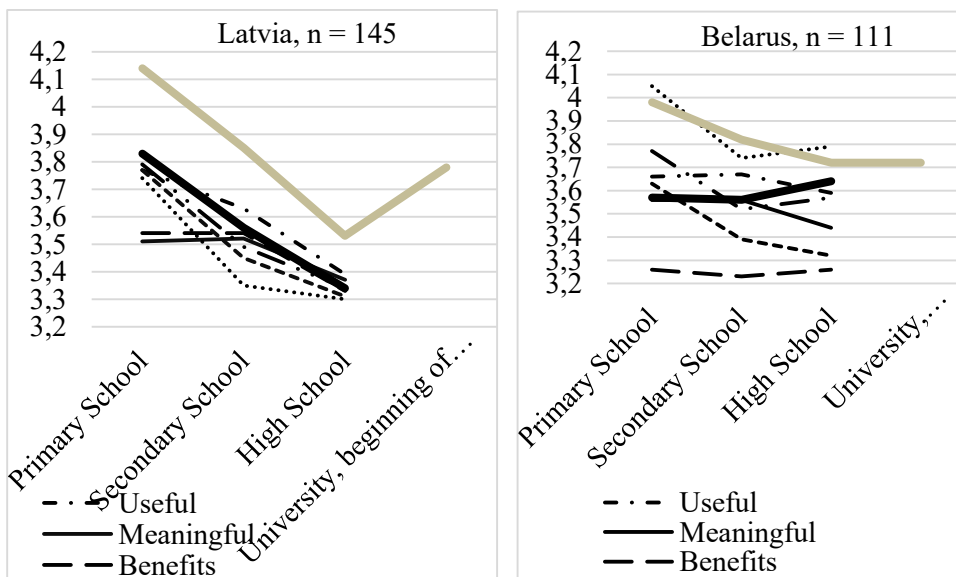
Latvia (n = 145), Belarus (n = 111)



For both samples KMO indicator of sampling adequacy was high, as well as the indicator of BST was significant,  $p < 0.0001$ . These results indicated that the sample size was sufficient in relation to the number of items of the YES-S, as well as that the correlations between the items significantly differed from zero and the items was suitable for factor distribution.

For both samples the obtained factor explains the criteria measured from 57.22% to 69.35%, which shows that the structure of the factor was good, as well as six criteria loaded obtained factor with a high loading of 0.652 - 0.947 (Lovik et al., 2017), which indicates that the developed scale was highly related to the known TPB attitude scales. The scales have one theoretical basis. The internal consistency of the scale - Cronbach Alfa was high.

The obtained results have been summarized graphically in Figure 1, which provides a well-visible picture of the dynamics of the studied criteria.



**Figure 1.** Dynamics of students' attitude and experience in physical education assessment

In the course of school, the assessment of the TPB attitude criteria for students in Latvia significantly deteriorated at all stages of school and at high school they were not exceed the mark 3.40 on a 5-point scale. At elementary school, criteria "Meaningful" and "Benefits" had lower scores and at primary school they did not significantly change, their significant deterioration took place at high school. In Belarus, changes in student

assessment were not so unequivocal. Significant deterioration predominantly occurred in the period primary school – secondary school, while assessments for criteria “Useful”, “Meaningful” and “Interesting” significantly deteriorated at high school. The variable “Benefits” had lower evaluations and they did not change throughout school. According to the direct question, the attitude towards physical education considerably deteriorated both in Latvia and in Belarus. Reliability of the change confirm paired sample t criterion:  $p \leq 0.05$ .

Correlations between evaluations of students’ attitude and experience in physical education according to the TPB criteria and assessments of students’ attitude and experience in physical education according to the direct question are presented in Table 3.

**Table 3**

Correlations between Attitude TPB Criteria and Attitude and Experience in Physical Education at School According to the Direct Question

Latvia, n=145							
		Useful	Meaningful	Benefits	Enjoyable	Desirable	Interesting
Primary School	A	0.410	0.204*	0.287	0.492	0.458	0.469
	E	0.313	0.212*	0.309	0.520	0.450	0.429
Secondary School	A	0.407	0.286	0.272	0.413	0.491	0.437
	E	0.452	0.424	0.381	0.469	0.586	0.517
High School	A	0.479	0.499	0.548	0.583	0.577	0.637
	E	0.634	0.630	0.600	0.634	0.620	0.660
Belarus, n =111							
Primary School	A	0.284	0.155**	0.313	0.645	0.488	0.527
	E	0.509	0.412	0.474	0.484	0.356	0.601
Secondary School	A	0.161**	0.231*	0.357	0.703	0.505	0.512
	E	0.309	0.335	0.424	0.531	0.418	0.467
High School	A	0.126**	0.430	0.333	0.648	0.593	0.513
	E	0.175**	0.451	0.365	0.682	0.600	0.496

Note. A: attitude; E: experience.

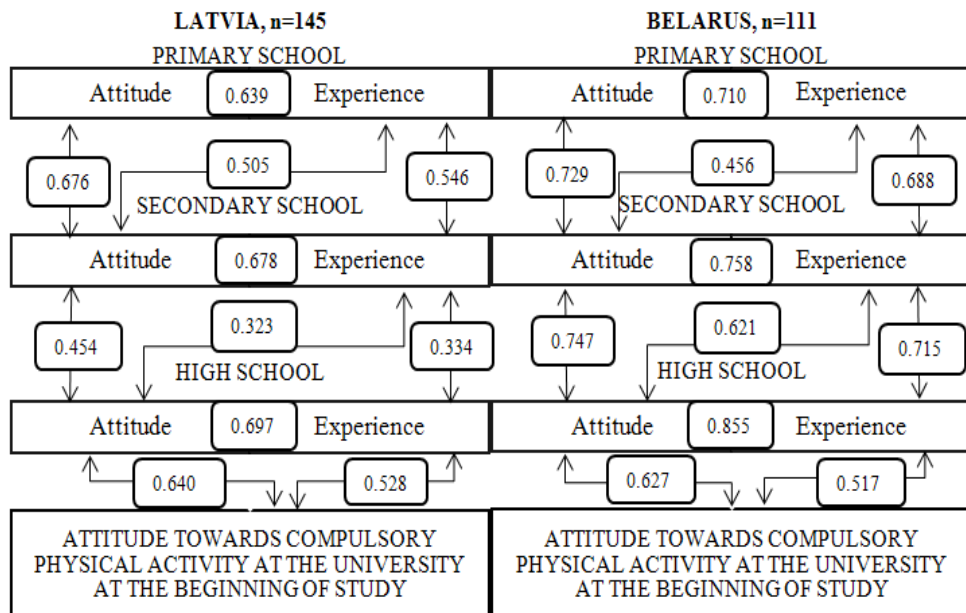
Correlation is significant at the 0.01 level.

\*Correlation is significant at the 0.05 level. \*\*Correlation is not significant at the 0.05 level.

According to Cohen’s standard (Cohen et al., 2003), the correlation coefficients showed that there were mostly average (0.30-0.49) and high ( $\geq 0.50$ ) correlations between the studied indicators: only 11 out of 72 correlation coefficients indicated weak correlation, 4 of them were not statistically reliable. Thus, students’ attitude and experience in physical education at school in Latvia and Belarus can be determined both via attitude TPB criteria and a direct question, but the question is debatable in the case if the correlation coefficients were not statistically reliable

(correlations in Belarus for the criteria “Useful” and “Meaningful”), which may be due to the variety of perception of the essence of concepts.

Figure 2 shows interesting correlations, which were found between students’ attitude and experience, which were assessed according to the direct question.



Correlation is significant at the 0.01 level.

**Figure 2.** Correlations between attitude and experience in physical education

At each school stage, attitude was related to experience, which indicates that in their assessment students closely associated the both concepts: “Attitude towards physical education” and “Experience in physical education”. Each subsequent stage of school was related to the previous one when assessing both attitude and experience. The experience in physical education of the previous school stage was related to the attitude towards physical education in the next school stage. In Belarus, the closeness of the relation was greater than in Latvia. Consequently, in both Latvia and Belarus, students’ attitude towards compulsory physical activity at the university was formed at high school, which, in turn, was influenced by the attitude and experience in physical education of the previous stages.

Taking into consideration the correlations developed at high school and at the university at the beginning of the studies, the following regression model was developed:

### Students' Attitude at University (AU)Y – Students' Experience in High School (EHS)X

**Latvia:**(AU)Y=2.15+0.66(EHS)X

Regression statistics:  $R^2=0.279$ ;  $F=47.732$  ( $p=0.000$ ), the coefficients were statistically significant ( $p<0.001$ ). The model is significant.

**Belarus:**(AU)Y=1.64+0.57(EHS)X

Regression statistics:  $R^2=0.267$ ;  $F=39.756$  ( $p=0.000$ ), the coefficients were statistically significant ( $p<0.001$ ). The model is significant.

For the high school stage, where the assessment marks of the researched indicators were lower than in the primary school stage, correlations were determined between the TPB attitude and experience criteria (Table 4).

**Table 4**  
Correlations between TPB Attitude and Experience Criteria in the High School

Latvia, n = 145					Belarus, n = 111					
<b>Useful</b>					<b>Useful</b>					
<b>0.759</b>	Meaningful				Meaningful				<b>0.737</b>	
<b>0.754</b>	0.710	Benefits			Benefits			0.846	<b>0.767</b>	
<b>0.590</b>	0.532	0.690	Enjoyable		Enjoyable		0.570	0.667	<b>0.315</b>	
<b>0.670</b>	0.664	0.657	0.696	Desirable	Desirable	0.820	0.560	0.581	<b>0.416</b>	
<b>0.685</b>	0.707	0.691	0.677	0.773	Interesting	0.723	0.712	0.822	0.803	<b>0.627</b>

Correlation is significant at the 0.01 level

According to the Cohen's standard (Cohen et al., 2003), the correlation coefficients indicated that there mostly was a close ( $\geq 0.50$ ) correlation between the researched indicators. The cross-correlations showed that the TPB criteria for attitude and experience in physical education were divided into two domains – cognitive: “*Useful*”, “*Meaningful*”, “*Benefits*” and affective: “*Enjoyable*”, “*Desirable*”, “*Interesting*”. Both in Latvia and in Belarus, the most significant binding criteria for the cognitive and emotional domains were “*Meaningful*” and “*Benefits*”, as well as in Latvia – criterion “*Useful*”.

### **Discussion**

In Latvia and Belarus at the beginning of studies at the university, the students' attitude of towards compulsory physical activity was positive and did not significantly differ. In Latvia, it was better than at high school, but lower than at primary school. In Belarus, it did not change in comparison to the attitude at high school, but it was also lower than at primary school. However, mean of assessing did not get a mark 4 (positive)

on 5 – point scale. The results showed a statistically significant correlation between the experience in physical education gained at high school and the students' attitude towards compulsory physical activity at the university, which, in turn, was influenced by the attitude and experience in physical education of previous stages. Studies provide similar information. Students with negative experience in physical education at school badly attend compulsory physical activity at the university and submit unjustified exemptions from physical activity (Šišlova & Fernāte, 2017). Negative experience in physical education was noted as an obstructive factor for participation in physical activity for adolescents and youth, as well as adults (Allender et al., 2006; Brooks & Magnusson, 2006; Streat, 2009; Beltrán-Carrillo et al., 2012; Cardinal et al., 2013; Lewis, 2014). Our research the developed regression model showed – for students to have a convincingly positive attitude towards physical activity (point 4) at the university, the assessment of experience in sport education at high school in Latvia must be not less than 4 points, while in Belarus it must be higher than 4.1 points on a 5-point scale, which did not correspond to this research findings: experience in physical education in high school was  $3.36 \pm 1.18$  in Latvia and  $3.64 \pm 0.98$  in Belarus.

To improve students' experience in physical education at high school, it is necessary to improve the emotional experience, which was assessed by the criteria “*Enjoyable*”, “*Desirable*”, “*Interesting*”, which, in turn, are related to “*Meaningful*” of the class and the sense of gain. In Latvia and Belarus, the attitude and experience criteria “*Benefits*”, which is related to emotional experience in physical education at high school, were assessed as sufficiently low at school. Studies provide following information. Physical education should be meaningful (Subramaniama & Silverman, 2007). The improvement of attitude towards compulsory physical activity at the university is associated with the sense of gain (Šišlova & Fernāte, 2015).

In time, the attitude towards physical education and the experience in physical education tended to deteriorate. The deterioration of attitude at school is shown in research data, where the attitude towards physical education was assessed for students of different age groups (Subramaniama & Silverman, 2007; Carcamo et al., 2016). In our research, the attitude and experience were evaluated for one and the same person based on their memory.

The indicator “*Students' experience in physical education at school*” can be assessed according to the TPB attitude criteria “*Useful*”, “*Meaningful*”, “*Benefits*”, “*Enjoyable*”, “*Desirable*”, “*Interesting*” at primary, secondary and high school, but the question is debatable in

Belarusian students' assessment of criteria "Useful" and "Meaningful", which may be due to the fact that students perceive the essence of the concepts differently.

For the first time, students' attitude towards compulsory physical activity at the university in the context of experience in physical education at school has been evaluated, as well as assessment criteria for experience in physical education have been determined. The research was conducted as a pilot study and shows a need to expand the research in terms of both the number of students and the essence of the set experience criteria. Based on our analysis, we determine design considerations for technologies that promote and support physical activity. An understanding of the needs of the population is a critical step in the design process, and this article provides a unique insight for those who work in this growing field.

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### Conflict of Interest

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Ethical committee of Latvian Academy of Sport Education approval was granted for the study: judgment No. 1/51813. Belarusian State University of Physical Training agreed to conduct a pilot study in the framework of the Erasmus+ programme project "Higher education student and staff mobility between Programme and Partner Countries" No. 2015-1-LV01-KA107-013377. The questionnaire was anonymous. Formal consent was gained from all the participants were made aware of the study.

### References

1. Ābele, A. (2014). Studējošās jaunatnes dominējošā sporta darbības motivācija. [Dominant Motivation for Sports Activities of Studying Youth]. *Humanitārās un sociālās zinātnes*, 22, RTU Izdevniecība, 80-85.
2. Allender, S., Cowburn, G., & Foster C. (2006). Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health Education Research*, 21(6), 826–835.

3. Baker, G.W., Little, T.D., & Brownell, K.D. (2003). Predicting Adolescent Eating and Activity Behaviors: The Role of Social Norms and Personal Agency. *Health Psychology, 22*(2), 189-198.
4. Beltrán-Carrillo, V.J., Devís-Devís, J., Peiró-Velert, C., Brown, David H.K. (2012). When Physical Activity Participation Promotes Inactivity: Negative Experiences of Spanish Adolescents in Physical Education and Sport. *Youth & Society 44*(1), 3–27.
5. Brooks, F., Magnusson, J. (2006). Taking part counts: adolescents' experiences of the transition from inactivity to active participation in school-based physical education. *Health Education Research, Theory & Practice, 21*(6), 872–883.
6. Cardinal, B.J., Yan, Z., & Cardinal, M.K. (2013). Negative Experiences in Physical Education and Sport: How Much Do They Affect Physical Activity Participation Later in Life? *Journal of Physical Education, Recreation & Dance, 84*(3), 49-53.
7. Carcamo-Oyarzun, J., Wydra, G., Hernandez-Mosqueira, C., Martinez-Salazar, C. (2017). Attitudes towards physical education: Degrees of importance and conformance among schoolchildren in Chile and Germany. An intercultural comparison. *Retos, 32*, 158-162.
8. Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2003). Applied multiple regression/correlation analysis for the behavioural sciences. (3rd ed.). Lawrence Erlbaum Associates.
9. Culbertson, S.S., Weychrauch, W.S., & Huffcutt, A.I. (2017). A tale of two formats: Direct comparison of matching situational and behaviour description interview questions. *Human Resource Management Review, 27*(1), 167-177.
10. Dombrowski, S.C., McGill, R.J., & Canivez, G.L. (2017). Exploratory and hierarchical factor analysis of the WJ-IV Cognitive at school age. *Psychological Assessment, 29*(4), 394-407.
11. Ghanji, H. (2001). *Social psychology*. Hedaiat publication.
12. Gucciardi, D. F., & Jackson, B. (2015). Understanding sport continuation: on integration on the theories of planned behaviour and basic psychological needs. *Journal of Science and Medicine in Sport, 18*, 31-36.
13. Gulley, T., & Boggs, D. (2014). Time Perspective and the Theory of Planned Behavior: Moderate Predictors of Physical Activity Among Central Appalachian Adolescents. *Journal of Pediatric Health Care, 28*(5), e41-e47.
14. Karimi, Y. (1998). *Social psychology*, Virayesh publication.
15. Koroļova, I. (2010). *Studentu un vidējo profesionālo iestāžu audzēkņu aptauja* [Students and vocational education students survey results]. LU FSI. Retrieved April 25, 2014 from: [http://www.fsi.lu.lv/userfiles/Aptaujas\\_rezultatu\\_ataskaite.pdf](http://www.fsi.lu.lv/userfiles/Aptaujas_rezultatu_ataskaite.pdf)
16. Lewis, K. (2014). Pupils' and teachers' experiences of school-based physical education: a qualitative study. *BMJ Open 4*(9):e005277, 1-7.

17. Lovik, A., Nassiri, V., Verbeke, G., Molenberghs, G., Sodermans, A.K. (2017). Psychometric properties and comparison of different techniques for factor analysis on the Big Five Inventory from a Flemish sample. *Personality and Individual Differences, 117*, 122-129.
18. Streat, W. B. (2009). Remembering instructors: Play, pain and pedagogy. *Qualitative Research in Sport and Exercise, 3*(1), 210–220.
19. Studentu un jauniešu sportošanas paradumi. (2012). [Student and youth sports habits]. Pētījuma-socioloģiskās aptaujas analītiskais noslēguma ziņojums, LASS. Retrieved March 15, 2015 from: <http://www.izm.gov.lv/images/statistika/petijumi/20.pdf>
20. Subramaniam, P.R., & Silverman, S. (2007). Middle school students' attitudes toward physical education. *Teaching and Teacher Education, 23*, 602-611.
21. Šišlova, E., & Fernāte, A. (2015). Studentu attieksmes pret obligātajām fiziskajām aktivitātēm izmaiņas studiju procesā. [Changes of Students Attitude towards Compulsory Physical Activity in Study Process]. *Humanitārās un sociālās zinātnes, 22*, RTU Izdevniecība, 26-36.
22. Šišlova, E. & Fernāte, A. (2016). Students' Attitudes towards Compulsory Physical Activities at University. In: Daniela, L., Rutka, L. (Eds). *Selected Papers of the Association for Teacher Education in Europe Spring Conference, 2015* (pp. 323-339). Cambridge Scholars Publishing LTD.
23. Šišlova, E., & Fernāte, A. (2017). Medical Certificates for Exemption from Compulsory Study Cours “Sports” at University: Problems and Solutions. *LASE Journal of Sport Science, 8* (1), 3 – 19. Retrieved December 20, 2015 from: <http://journal.lspa.lv>
24. Špona, A. (2004). *Audzinašanas process teorijā un praksē*. [The process of upbringing in theory and practice]. RaKa.
25. Vecenāne, H., & Fernāte, A. (2012). Studentu dzīvesveida raksturojums – situācijas izpēte Latvijā. [Characteristics of Students Lifestyle - Study of the Situation in Latvia]. *LSPA Zinātnisko un metodisko rakstu krājums, 2-14*. Retrieved February 10, 2015 from: [http://www.lspa.eu/files/research/2012/2012\\_Fernate\\_2\\_14.pdf](http://www.lspa.eu/files/research/2012/2012_Fernate_2_14.pdf)
26. Коледа, В. А., & Новицкая, В. И. (2016). *Отвечает ли физическая культура студентов вызовам современности?* [Does the physical culture of students answer the challenges of our time?]. В *Социальная защита и здоровье личности в контексте реализации прав человека: наука, образование, практика*, Минск: БГУ, 52-55.
27. Сакович, Р.С., & Кузьмицкая, Е.А. (2017). Определение мотивации студентов Белорусского национального технического университета к занятиям физической культурой и спортом [Determination of the motivation of students of the Belarusian National Technical University for physical education and sports]. В Материалах XV Международной научной сессии по итогам НИР за 2016 год, посвященной 80-летию университета “*Научное обоснование физического воспитания*,



- спортивной тренировки и подготовки кадров по физической культуре, спорту и туризму*”, 3, Минск: БГУФК, 205-210.
28. Сулейманова, М.И. (2017). Мониторинг физической и функциональной подготовленности студентов первого года обучения [Monitoring of physical and functional preparedness of first-year students]. В Материалах XV Международной научной сессии по итогам НИР за 2016 год, посвященной 80-летию университета “*Научное обоснование физического воспитания, спортивной тренировки и подготовки кадров по физической культуре, спорту и туризму*”, 3, Минск: БГУФК, 401-404.
29. Шаповалова, Т.М., & Врублевская, Л.Г. (2012). Отношение студентов к формированию здорового образа жизни [The attitude of students towards the formation of a healthy lifestyle]. Retrieved February 14, 2017 from: <http://rep.polessu.by/bitstream/112/7586/1/83.pdf>

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