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SUBJECTIVE EVALUATION OF HEALTH EDUCATION BY
CZECH STUDENTS

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Abstract

Health education (HE) is an established educational field in lower secondary education in the Czech Republic (CR). Therefore, researching HE, including state curriculum, implemented curriculum and achieved curriculum is emphasised to assess whether students studying HE under the leadership of a qualified teacher evaluate this course as more popular, enjoyable and beneficial compared with students without such leadership. Identical effects are also assessed in terms of the real number of lessons and health promotion projects. The research sample included 755 students in grade 9 from 23 elementary schools in 5 regions of the CR. The research tool was a questionnaire focusing on students' opinions about the HE implemented curriculum using numerical scales ranging from 1-10. The factors that influence the reality of Health education were investigated by means of a questionnaire for head teachers. Relevant analyses were used to identify the effect or confirm the positive trend of selected factors of educational reality, such as HE teacher qualification, additional HE lessons, and health promotion projects, while the subjective evaluation of the HE curriculum was evaluated in terms of the popularity and benefits of HE in the students' personal lives. The selected factors of educational reality have an effect on the subjective evaluation of Health education by students at the end of compulsory education in the Czech Republic. HE should be taught by a qualified teacher using an adequate number of lessons, and health promotion projects should be implemented.

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1. Introduction

Health education is an educational field, which was established in the CR on the basis of Family education and since 2007 has been an integral part of compulsory education in the framework of lower secondary education (ISCED 2) in the CR. All versions of the curricular document called the Framework educational programme for elementary education (FEP EE) state that the mission of the educational field is to influence pupils in a formative way in the area of health promotion and health education, active approach to health, knowledge, attitudes and application of the principles of adequate lifestyle, prevention of risk behaviour, shaping and development of health literacy, and other related aspects (Fialova, Flemr, Maradova & Muzik, 2014; Hrivnova, 2014, 2018a, 2018b; Muzikova, 2010; FEP EE, 2013). The number of HE lessons as defined since 2007 by the FEP EE for lower secondary school is 2 lessons per week per 4 grades (grade 6 to 9) of lower secondary school (FEP EE, 2013). This means that the number of lessons does not allow continuity of HE throughout lower secondary education, as highlighted by Fialova et al. (2014), unless the so-called disposable lessons are used. The low number of lessons may cause a reduction of the 'prescribed' educational content in the educational reality, which means that some topics lack sufficient attention, and may also cause a decrease in suitable teaching methods (especially activating methods) and lapse into traditional teaching methods that lack motivation. Hrivnova (2014) states that in the CR more than 50% of elementary schools use the disposable lessons and allocate more lessons to HE than prescribed by the FEP EE. An important aspect in the HE curricular reality is the HE teacher, especially the teacher's qualification in HE. According to Hrivnova (2014), HE is taught by qualified teachers only in one third of schools.

The importance and relevance of education in the field of HE is based on a number of studies focusing on the awareness, attitudes and behaviour of children and adolescents in the area of health and lifestyle. A good example is the *Health Behaviour in School-Aged Children (HBSC) study* (Madarasova Gecková, Dankulincova, Sigmundova & Kalman, 2014). The inclusion of HE in the system of education helps achieve the strategic and conceptual objectives relating to health promotion in a national and international context, such as Health 21 (1998) and Health 2020 (2013). The teaching of HE is positively supported by projects aimed at HE and a healthy lifestyle based on the strategic national and international documents Health 21 (1998) and Health 2020 (2013).

HE is a multidisciplinary field which in comparison with the main educational fields has specific aspects in terms of content and didactics (Muzikova, 2010; Fialova et al., 2014; Hrivnova, 2014, 2018, Svoboda, 2015). Didactic aspects include the necessity to use activating teaching methods, elements of project-oriented teaching, motivation to use the knowledge of Health education in personal life, and other related aspects.

To increase the quality and efficiency of the teaching process, curricular research studies are needed because they bring information on the implemented and primarily achieved (learning outcomes and long-term educational effects) level of the Health education curriculum, possibly in relevant contexts.

In the CR, limited curricular research studies aimed at HE have been done. A good example is a research study carried out at the beginning of introduction of HE in the elementary education system by Muzikova (2010). The implementation of the state curriculum in the school curriculum was investigated by Maradova and published in *Educational area of Man and health in contemporary school* by Fialova,

Flemr, Maradova & Muzik (2014), which includes a comprehensive summary of existing curricular research studies aimed at HE. Hrivnova (2014) analysed the level of the implemented curriculum of HE in the CR from the perspective of elementary school head teachers. The learning outcomes in HE were assessed as average by Hrivnova (2018a) in her curricular research study. Svoboda (2015) analysed the subjective level of assessment of the learning outcomes in individual areas of HE and recommended that curricular research studies be performed.

For the reasons mentioned above, in 2014 a research study entitled *'Health education from the perspective of elementary school students and teachers'* was carried out, the purpose of which was to analyse the subjective evaluation of the implemented curriculum of Health education by students in grade 9 of elementary schools. Partial results (Hrivnova, 2018b) suggested that Health education was rather popular among students, they looked forward to Health education classes, activating teaching methods were used in classes, which motivated the students for further learning and gaining new knowledge. However, a serious finding is that at the end of compulsory education students almost fully agree that they can use the "knowledge, skills and attitudes gained in Health education in their personal life (now or in the future)".

Similar conclusions were formulated in a research study aimed at the attitudes of lower secondary school students to health promotion and an optimum lifestyle (Chraskova, 2016). The results showed that the attitudes in this area differed depending on gender and grade of the 2nd stage of elementary school.

2. Problem Statement

It has been established that very little research has been done in CR on the curriculum and related aspects of HE. The purpose of the present study is to expand the knowledge in this educational field by assessing the effect of selected factors of the actual reality of HE focused primarily at the level of subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools.

3. Research Questions

The research questions that are based on the present study and are answered below are as follows:

1. Do selected factors of the educational reality of HE affect the subjective evaluation of the implemented curriculum by students in grade 9 of elementary schools in the Czech Republic?
2. Is the level of subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools affected by the presence of a qualified HE teacher?
3. Is the level of subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools affected by a higher number of HE lessons?
4. Is the level of subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools affected by the implementation of projects aimed at health promotion and HE in the educational reality?

4. Purpose of the Study

The purpose of the study is to assess the effect of selected factors of the educational reality, such as the qualification of the HE teacher, higher number of HE lessons, and implementation of projects to

promote health and a healthy lifestyle in lower secondary education on the level of subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools (at the end of compulsory education in the CR).

The subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools related to six selected areas of the educational reality, which were investigated by means of a questionnaire. Specifically, the students responded to the following statements and expressed their agreement on a numerical scale 1-10:

1. Health education is among my favourite subjects
2. I always look forward to Health education classes
3. Health education classes use the so-called activating teaching methods (group work, didactic games, role-play methods, etc.)
4. The use of activating teaching methods in Health education classes motivates me to learn and gain new knowledge
5. In Health education classes we use a textbook or worksheets
6. I believe that I will be able to use the knowledge, skills and attitudes gained in Health education in my personal life (now or in the future)

Identifying the effect of selected factors of the educational reality of HE on the level of subjective evaluation of the implemented HE curriculum by students may help formulate adequate recommendations to improve the educational reality of Health education in the Czech Republic.

5. Research Methods

The research sample comprised students in grade 9 of elementary schools and included a total of 755 students (397 girls, i.e. 52.58% and 358 boys, i.e. 47.42%) from 23 elementary schools in 5 regions in the CR (the total number of all students in grade 9 in the CR in the year of the research was 74,527; see the publication *Školy a školská zařízení – za školní rok 2013/2014* (2014). The number of student participants meets the recommended sample size with an error of 5% for 95% significance (anticipated sample level 50%), because for each 100,000 units of the basic sample, a selection sample of 383 units is recommended (Wright, 2009).

The research method was a questionnaire designed by the authors, observing all basic attributes as recommended for example by Chraska (2007). The student questionnaire consisted of two parts; the first part focused on the overall students' perspective of HE and their attitude to the course. This part of the questionnaire included 11 items, of which 9 items focused on the evaluation of various statements using numerical scales (1-10). The numerical scale was used to indicate the degree of agreement/disagreement with the statements, where 1 indicated full disagreement and 10 indicated full agreement. The responses from the 755 students were used to calculate a coefficient for each item representing the arithmetic mean. If the value of the arithmetic mean (coefficient) reaches 5.5 and higher, it meant the students agreed or fully agreed with the statement. If the value of the arithmetic mean equals 1-5.4, it meant the students fully disagreed or rather disagreed with the statement. The coefficients were also calculated separately with regard to gender and statistically compared using the t-test. Two items of the first part of the student

questionnaire (9 and 10) were formulated as open questions where space was provided for free answers; however, their analysis is not included in this paper. Of the 9 closed items, the present study includes an analysis of 6 items. Nor does this paper provide an analysis of the second part of the student questionnaire (designed in accordance with FEP EE, 2013 [1], specifically the 6 categories of the learning content/key thematic units specified in this document, i.e. the areas and thematic subareas, where the students commented on whether they think that the themes/subareas were dominant or absent in HE and which subthemes they preferred). The selected factors of the educational reality were investigated by means of a questionnaire intended for head teachers/teachers from 23 elementary schools. The first part of the questionnaire focused on selected aspects of the educational reality and included a total of 10 items. The present study includes an analysis of 3 items relating to teacher qualification, real number of HE lessons, and implementation of health promotion projects. The second part of the questionnaire for head teachers was identical with the second part for students and its analysis is not included in the present study.

The statistical processing of the effects of the educational reality on students' subjective evaluation of the implemented curriculum was performed by means of standard statistical methods: t-test and single-factor analysis of variance ANOVA.

The reliability of the questionnaire for students in grade 9 in elementary schools including 9 scale items was tested by Cronbach's alpha. The final value was 0.64 (0.65 for the group of girls and 0.62 for the group of boys).

6. Findings

The findings concerning subjective evaluation of the implemented HE curriculum by students in six selected areas in relation to the three selected factors of the educational reality of HE suggest the following:

6.1. The effect of qualification of the HE teacher in the educational reality on the subjective evaluation of the implemented curriculum by students in grade 9 of elementary schools

An analysis of correlations related to the effect of qualification of the Health education teacher confirmed a significant effect in five of the selected six evaluated areas of the implemented curriculum of Health education (Table 01).

Table 01. Comparison of subjective evaluation of the implemented curriculum of HE by students taught by a qualified or unqualified HE teacher in the educational reality.

Variable	t-test								
	Average Unqualified teacher	Average Qualified teacher	T	sv	p	Number of valid Unqualified teacher	Number of valid Qualified	Standard deviation Unqualified	Standard deviation Qualified
Health education is among my favourite subjects	6.06	6.87	-4.14	753	0.000***	560	195	2.41	2.16
I always look forward to Health education classes	5.81	6.45	-3.20	753	0.001**	560	195	2.47	2.26
Health education classes use the so-called activating teaching methods (group work, didactic games, role-play methods, etc.)	6.09	6.83	-3.41	753	0.0007***	560	195	2.58	2.57

The use of activating teaching methods in Health education classes motivates me to learn and gain new knowledge	5.22	5.90	-3.23	753	0.001**	560	195	2.53	2.48
In HE classes we use a textbook or worksheets	5.34	5.24	0.41	753	0.68	560	195	2.87	3.19
I believe that I will be able to use the knowledge, skills and attitudes gained in HE in my personal life (now or in the future)	6.93	8.12	-5.71	753	0.000***	560	195	2.62	2.19

* p<0.05 **p<0.01 *** p<0.001

Those students who were taught by a qualified HE teacher showed a significantly higher degree of agreement with the statements (as opposed to students taught by an unqualified HE teacher) concerning ‘popularity’ and ‘looking forward to classes’. At the same time, they confirmed the use of activating teaching methods and the motivating effects of these methods for learning and gaining new knowledge. Students taught by a qualified HE teacher almost fully agree (coefficient 8.12) with the statement that they can use the knowledge, skills and attitudes acquired in HE in their personal life.

6.2. The effect of the number of HE lessons in the educational reality on the subjective evaluation of the implemented curriculum by students in grade 9 of elementary schools

An analysis of correlations relating to the subjective evaluation of the implemented HE curriculum confirmed significant differences in terms of the number of HE lessons in the educational reality of elementary schools in all six monitored parameters. A positive association (a higher number of lessons corresponded with more positive responses of students) is clear especially in those items that focus on the evaluation the popularity of the course (p=0.006), use of activating teaching methods in classes (p <0.001), and the motivational effect of these methods for learning and gaining new knowledge (p=0.005), and in the statement that students can use the knowledge, skills and attitudes acquired in Health education in their personal life (p <0.001).

Note: The mentioned positive trend concerning the increasing number of affirmative responses is not significant in students whose number of HE lessons in the implemented curriculum is 3 lessons / week / 4 grades. In these elementary schools, HE was mainly taught by an unqualified teacher.

The findings are illustrated in Figure 01 a) and b).

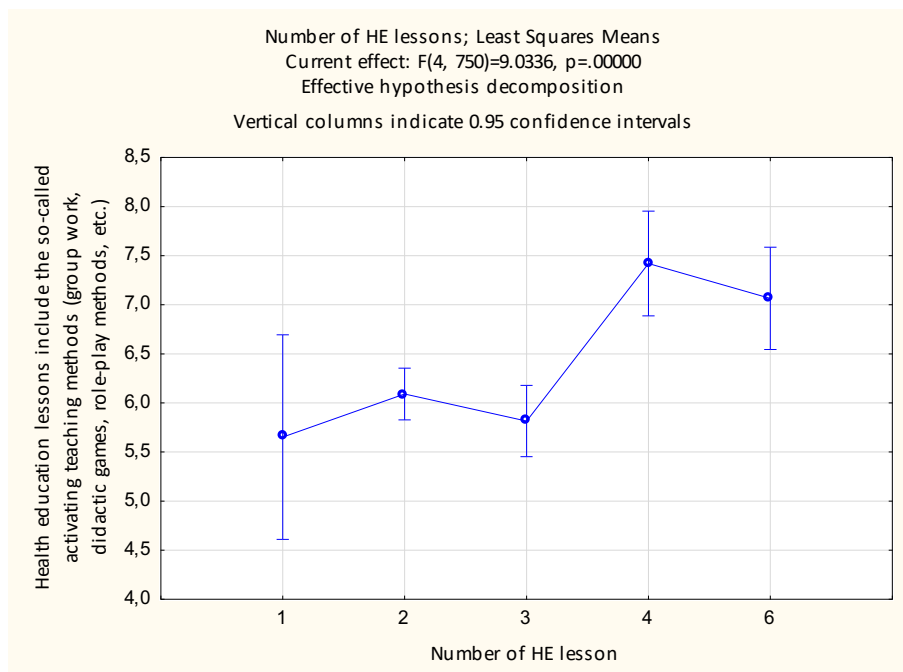


Figure 01. (a) Relationship between the subjective evaluation of using activating teaching methods in HE by students in grade 9 and the number of HE lessons in the educational reality.

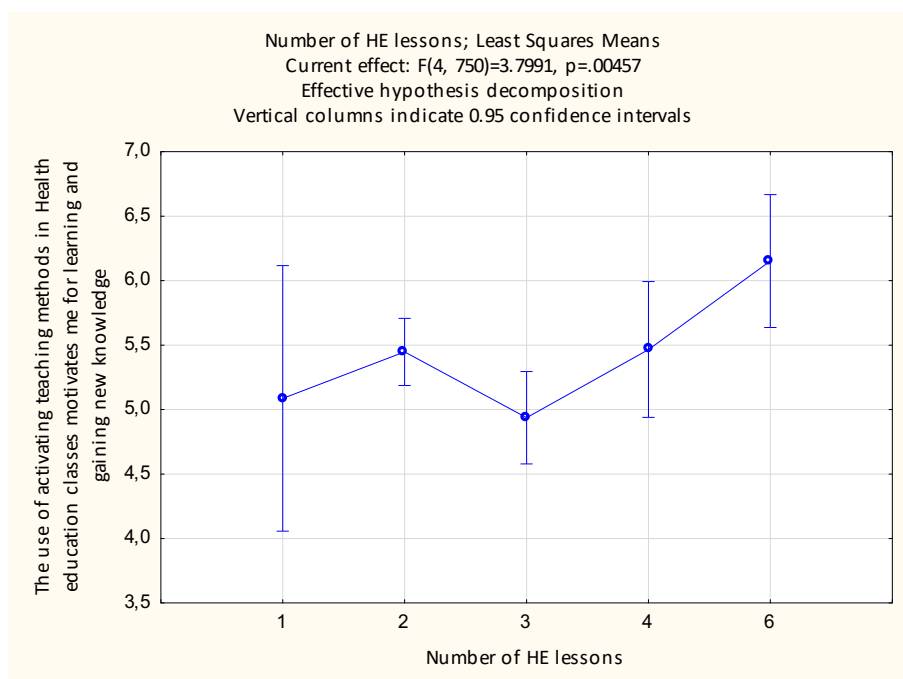


Figure 01. (b) Relationship between the subjective evaluation of using activating teaching methods in HE in terms of motivation for learning by students in grade 9 and the number of HE lessons in the educational reality.

6.3. The effect of projects concerning HE, health promotion, prevention of risk behaviour and development of health literacy in the educational reality on the subjective evaluation of the implemented curriculum by students in grade 9 of elementary schools

An analysis of correlations between the implementation of projects related to HE and the subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools confirmed significance in two of the six assessed parameters (Table 02).

Table 02. Comparison of students' subjective evaluation of the implemented HE curriculum with respect to the implementation or absence of HE projects in the educational reality.

Variable	t-test								
	Average Implementation of projects YES	Average Implementation of projects NO	T	sv	p	Number of valid Implementation of projects YES	Number of valid Implementation of projects NO	Standard deviation Implementation of projects YES	Standard deviation Implementation of projects NO
HE is among my favourite subjects	6.33	5.96	1.54	753	0.12	640	115	2.39	2.25
I always look forward to HE classes	6.01	5.75	1.08	753	0.28	640	115	2.48	2.15
HE classes use the so-called activating teaching methods (group work, didactic games, role-play methods, etc.)	6.31	6.11	0.76	753	0.45	640	115	2.63	2.42
The use of activating teaching methods in HE classes motivates me to learn and gain new knowledge	5.48	4.92	2.18	753	0.03*	640	115	2.58	2.22
In HE classes we use a textbook or worksheets	5.53	4.15	4.68	753	0.000***	640	115	2.95	2.67
I believe that I will be able to use the knowledge, skills and attitudes gained in HE in my personal life (now or in the future)	7.30	6.86	1.69	753	0.09	640	115	2.58	2.47

* p<0.05 **p<0.01 *** p<0.001

Those students who participated in project-oriented classes tend to agree with the statement that the use of activating teaching methods in HE classes motivates them to learn and gain new knowledge, and at the same time confirm the use of textbooks and worksheets in HE classes. Even without a confirmed statistical significance, there is a clear positive trend in the areas of 'popularity', 'looking forward to HE classes', 'use of activating teaching methods' and 'contribution of HE for personal life'.

7. Conclusion

Relevant analyses were used to identify the effect or confirm the positive trend of selected factors of the educational reality, such as HE teacher qualification, more HE lessons, implementation of health promotion projects on the subjective evaluation of the implemented HE curriculum by students in grade 9 of elementary schools. Those students who were taught by a qualified teacher, had more HE lessons than prescribed by the curricular document FEP PE (2013) and were involved in projects aimed at health promotion, reported greater popularity of HE and the fact that they looked forward to HE classes. They confirmed the use of activating teaching methods in HE classes and the fact that these methods motivated them to learn and gain new knowledge. Those students who had more lessons and participated in projects significantly confirmed frequent use of textbooks and worksheets in HE. The most important finding is that those students who were taught by a qualified teacher and those with a higher number of lessons

significantly agreed that they could use the knowledge, skills and attitudes gained in HE in their personal life.

This fact should encourage the curriculum developers to increase the number of HE lessons to achieve at least 4 lessons/week/4 grades in lowed secondary education in order to ensure the continuity of HE from grade 6 to 9.

Another recommendation is for faculties of education in the CR to continue to train Health education teachers who could then saturate the need for qualified HE teachers. Elementary school head teachers should employ the graduates of HE teacher training courses in their schools.

The last recommendation is also intended for elementary school head teachers and relates to the implementation of projects aimed at HE in the educational practice of elementary schools, which is consistent with national and international health promotion guidelines.

To summarize the recommendations based on the partial results of the present study the selected factors of educational reality have an effect on the subjective evaluation of HE by students at the end of compulsory education in the CR. It is recommended that HE be taught by a qualified teacher using an adequate number of lessons (ideally 4 lessons per week per 4 grades), and health promotion projects should be implemented.

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