SUSTAINABLE DEVELOPMENT IN EDUCATION: A CASE STUDY OF GENERAL EDUCATION SCHOOLS

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Abstract.

Purpose and aim of the study: *The research aims to examine the perception of sustainable development problems in general education schools.*

Design / Methodology / Approach*: The research employed the following methods: descriptive and logical construction were used for reviewing and analysing research papers and other information sources, as well as for scientific discussion. Statistical analysis was employed to process and analyse primary (survey) data on students' and teachers' understanding and knowledge of sustainable development. The graphic method was applied to better represent and compare the research results.*

Main Findings: *sustainable development was found to be determined by a balance between the needs of the present and future generations, based on the rational consumption of resources. The research results revealed that awareness of sustainable development is a key driver for sustainable development and that it is important to integrate sustainable development issues into the school curriculum to introduce sustainable habits into society.*

Originality: *The research examined the concept of sustainable development in the context of the education industry, assessing the opinions of general education school students and teachers on sustainable development problems.*

Implications: *The research provides a basis for further research on aspects of sustainable development in general education schools.*

Keywords: *education for sustainable development, students, sustainable development, teachers.*

Received: *29 October 2024* ***Revised:*** *10 November 2024* ***Accepted:*** *28 November 2024*
Published: *16 December 2024*

Introduction

Nowadays, progress interacts with change, which contributes to not only an increase in prosperity and the development of new products but also has irreversible impacts on resource stocks and their capability to renew themselves for use by future generations. The involvement of every resident is essential for the rational use of resources and the mitigation of climate change. Education, which is a fundamental tool for transforming human behaviour, is the starting point for changing individual attitudes and simulating responses to avoid the consequences of current processes. Reasonable resource use and the mitigation of climate change could be achieved by integrating sustainable development issues into the curriculum, holding educational events and activities not only for children but also for adults and explaining the nature and necessity of sustainable development.

https://doi.org/10.17770/jresd2024vol16.8285
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The **research aims** to examine the perception of sustainable development problems in general education schools.

To achieve the aim, the following specific research **tasks** were set:

1) to examine the theoretical aspects of sustainable development for the education industry;
2) to conduct a survey and assess the aspects of sustainable development in two general education schools in Latvia;
3) to draw conclusions and make proposals for raising awareness of sustainable development issues in general education schools in Latvia.

Hypothesis: knowledge and understanding of sustainable development shapes individuals' responses to sustainable development.

The research employed qualitative and quantitative **methods**. The monographic method and logical construction were used to summarise the theoretical aspects of the research problem, analyse them and conduct a scientific discussion. The questionnaire method was used to identify the opinions of teachers and students from general education institutions on their knowledge of sustainable development issues and the integration of sustainable development issues into the curriculum. Statistical analysis (SPSS) was employed to identify and analyse correlations between the survey responses. The graphical method was used to represent and compare the results.

Research results and discussion

1. Theoretical aspects of the concept of sustainable development

Acting for the future of our children is the conceptual meaning of the word "sustainability", and it refers to the ability of an entity or system to create preconditions for long-term balanced self-development and, at the same time, to avoid creating conditions that contribute to the destruction or self-destruction thereof (Tēzaurs.lv). The explanatory and synonym dictionary "Thesaurus" also refers to sustainability (ilgtspējība) alongside another synonym (ilgtspēja), which confirms the semantically equivalent meanings of the words. The balance between rationally meeting the needs of present and future generations, as expressed in the definitions of both sustainability and sustainability, is embodied in the United Nations (UN) Rio Declaration on Environment and Development, which defines sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (General Assembly, 1992). Globally, the "bible" of sustainability is the Sustainable Development Goals (SDGs) defined by the UN to be achieved by 2030. The SDGs cover all the major issues that need to be addressed for balanced global development

(Swedbank, 2021), focusing on three important dimensions: economic, social and environmental.

Tensions between environmental and societal needs become increasingly pronounced in contemporary science and policy, as there are disagreements about what development, sustainability and the basic conditions for a dignified life for all people mean (Bela, 2018). There are disagreements about the use of the term sustainable, as its genesis can be traced in both etymology and international documents. In Latvian, sustainability emphasises the temporal dimension (to last), while in English sustainability has its origins in the Latin verb *sustinere*, meaning to keep, to limit, to protect (Kušners, 2022). The terms sustainability and sustainable development are often used synonymously, even though they are conceptually different. According to UNESCO, sustainability could best be described as a long-term goal, such as achieving a more sustainable world, while sustainable development, as the name suggests, refers to the many processes and pathways used to stimulate development or achieve progress in a sustainable way, such as the GDGs, which are the global goals that encourage all countries and sectors to work together to tackle the challenges of sustainable development in order to achieve sustainability (Bianch et al., 2022). There is no consensus on the terms and concepts used to describe education for and about sustainable development: 'education for sustainable development', 'education for sustainable development', 'sustainability education', 'education for a sustainable future', 'development education' etc., yet the common unifying element is targeted educational activities that address global equity and sustainability issues (O'Flaherty & Liddy, 2018).

Sustainable development should emphasise sustainability science, or science for sustainable development. It brings together knowledge about the dynamics of human and environmental systems to facilitate planning, project implementation and practical measure evaluation that promote sustainability and improve the links between various scientific and research disciplines, as well as between policymakers, implementers and society (Zaļoksnis, 2024). Education for sustainable development (ESD) is becoming increasingly important as a response to the pressing societal and environmental challenges facing the world (Torsdotti et al., 2024), hence the importance of addressing ESD, which is inseparable and perceived in context and about sustainability.

In the Environmental Protection Law (EPL) of the Republic of Latvia (2006), the term ESD is defined as education that gives each individual opportunities to acquire the knowledge, values and skills necessary for participation in decision-making on individual or collective actions at the local and global level to increase the quality of life now without compromising the needs of future generations. Chapter 8 of the EPL refers to

environmental science, environmental education and ESD, which means that ESD is nationally enshrined and made compulsory in the Latvian education system. In the EPL, Chapter 8 Environmental Science, Environmental Education and Education for Sustainable Development provides that the Ministry of Environmental Protection and Regional Development in cooperation with the Ministry of Education and Science shall take necessary measures for the development of environmental science to promote scientific activities in the field of sustainable development, environmental protection and environmental education, thereby contributing to research on environmental quality, eco-innovation and environmental technologies, as well as identifying and solving environmental problems. Paragraph 2 of Section 42 stipulates that higher education institutions and colleges shall make a course on environmental protection compulsory, while Paragraph 3 provides that higher education institutions and colleges shall include a course on sustainable development in their teacher training. In addition to the EPL, neither the Education Law (1998) nor the General Education Law (1999) refer to ESD as applicable to general education.

Global Citizenship Education (GCED) should be viewed holistically, is inseparable from ESD and equally relevant at the global, national and local levels. GCED, global education and global learning could be considered largely synonymous concepts with overlapping content and methods of delivery. The three comprehensive concepts are generally considered to encompass a wide range of other "related" fields, e.g. human rights education, peace education, intercultural or multicultural education, anti-racism education, environmental education, development education, education for sustainable development and others (Suša, 2019). The Global Education Guidelines 2021-2025 (Guidelines) is a document that sets the conceptual and contextual framework for global education. The purpose of the Guidelines is to promote the successful integration and use of global education approaches in formal education, non-formal education, public awareness, advocacy and global education partnership activities. Various global education projects, events and campaigns are implemented in Latvia every year, and the experience of the non-governmental sector of Latvia in global education has been appreciated internationally. However, for many years, global education has not been strategically developed because governing bodies do not perceive it as an essential part of their own agenda (LAPAS, 2022). This raises the question of how to contribute to the sustainability of the planet if we are not aware of the seriousness of the problem at the domestic and local levels. Meadows (2020) believes that global sustainability is impossible without local sustainability. It could be concluded that global problems, which are seemingly distant, need to be seen as a whole, without separating the local environment from global processes,

with education playing an important role in transforming thinking not only at the personal level but also at the community and institutional levels.

The authors can conclude that education is one of the cornerstones of sustainable development at all levels: local, national, EU and global. Knowledge-based decision-making and action plans are more likely to succeed. Moreover, knowledge is important not only at the decision-making level but also for residents in their day-to-day decision-making that contributes to the achievement of the SDGs.

With the introduction of the new standard or the implementation of the competences-based approach to curricula, significant changes have occurred in the education system of Latvia, with the emphasis on quality education at all levels of education and at every educational institution (quality education according to the levels of education implemented in a particular educational institution). According to the Regulations Regarding the State Basic Education Standard (2018), the learning outcomes in social and civic learning, science learning, and technology learning (especially the learning outcomes upon finishing grade 9) require the transversal skills "Civic participation" and "Critical thinking and problem-solving" and have to cover such topics as "People are aware alternatives when planning the use of available resources", "Usage of resources, environmental impacts", "Socially responsible decision-making" and "Thoughtful design solutions are useful and sustainable', which are aimed at involvement in global processes, decision-making, responsible actions for sustainability etc. The Regulations Regarding the State General Secondary Education Standard (2019) specify the learning outcomes to be achieved for the transversal skills "Creativity and entrepreneurial ability", "Critical thinking and problem-solving" and "Civic participation". The authors believe that the transversal skills acquired in both primary and secondary education are complex, as each of the skills implicitly relates to sustainability. The Regulations Regarding the State General Secondary Education Standard define the skill to be acquired upon finishing grade 12. The topics related to sustainability are incorporated into the learning outcomes for social and civic, science and technology.

An analysis of challenges identified in the Education Development Guidelines (Izglītības attīstības pamatnostādnes…, 2021) (insufficient attractiveness and competitiveness of the teaching profession, poor teacher and academic personnel replacement etc.) raises a question of how to ensure and who will ensure ESD in teaching. More than a third or 38% of new teachers considered leaving the teaching profession in the next five years (LETA, 2023), and there was a shortage of 1013 teachers in schools and pre-schools in Latvia at the beginning of the school year 2023/2024 (Laganovskis, 2023), which makes us consider not only the environment but also the education industry as a whole in the context of sustainability.

2. Understanding sustainable development issues in general education schools

The goal of the survey was to identify students' and teachers' knowledge and understanding of sustainable development issues. The research method was a questionnaire survey, with school students and teachers being the target population. The questionnaire was created on the Google Forms platform and sent electronically to the students and teachers of two general education schools: the Balvi State High School (BSHS) and Rezekne State High School No. 1 (RSHS1) from 2 May to 14 May 2024. Of the total students, 57.53% (149) in the BSHS and 10.39% (58) in RSHS1 completed the questionnaires. In total, 207 students completed the questionnaires, 149 or 72% in the BSHS and 58 or 28% in RSHS1. Of the total teachers (45 in the BSHS and 54 in RSHS1), 71.11% (32) (BSHS) and 27.78% (15) (RSHS1) completed their questionnaires.

The students' awareness (I have heard) and knowledge (I know) of the concepts of CO2 footprint, Green Deal, Biodiversity, Climate Change, Fair Trade, Circular Economy, Social Justice and Gender Equality showed an understanding of environmental and sustainable development issues. The higher level of awareness – "I have heard and I know what it means" – was found among BSHS and RSHS1 students for the concepts "Climate Change" at 85.2% and 93.1%, respectively, "Gender Equality" at 69.2% and 81.1%. The lowest level of awareness – the answer "I have not heard" – among BSHS students was found for the concepts "CO2 footprint" (43%) and "Green Deal" (38.3%), while among RSHS1 students – the concepts "Green Deal" (53.4%) and "Circular economy" (32.8%). The results revealed that the concepts "Climate Change" and "Gender Equality" had been explained to the students through the curriculum, yet insufficient attention was paid to the concepts "CO2 Footprint", "Green Deal" and "Circular Economy".

An analysis of the responses of students and teachers to the statement "My school is a sustainable-minded school" revealed that the answers "Rather agree" and "Strongly agree" (hereinafter affirmative answers) were given by 70.47% of students and 87.5% of teachers in the BSHS (Table 1) and 58.62% and 86.66%, respectively, in RSHS1. The BSHS students and teachers were more likely than RSHS1 ones to rate their school as a sustainably minded school. Regarding the need for more educational events/activities on sustainability in school, 55.03% of teachers and 78.13% of teachers in the BSHS and 48.28% and 80% in RSHS1 answered in the affirmative.

Of the total, 53.02% of students and 78.13% of teachers in the BSHS and 43.1% of students and 66.67% of teachers in RSHS1 gave affirmative answers, considering their lifestyle to be sustainable. The BSHS students and teachers rated their lifestyle as sustainable to a greater extent than the

RSHS1 students and teachers did. The results showed that the students and teachers considered sustainability an important topic. However, there were differences between the opinions of the groups. Most of the teachers considered their school to be a sustainable-minded school, rated their lifestyle as sustainable and the teachers were more interested than the students in participating in events/activities on sustainability.

Table 1 Students' and teachers' opinions about sustainability in school and lifestyle, % (authors' calculations, N=207, N=45)

Statement / Answer	My school is a sustainable-minded school				More education/activities on sustainability should be held at school				My lifestyle is sustainable			
	Students		Teachers		Students		Teachers		Students		Teachers	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	14.77	15.52	43.75	33.33	19.46	20.69	12.50	13.33	12.75	10.34	6.25	6.67
Rather agree	55.70	43.10	43.75	53.33	35.57	27.59	65.63	66.67	40.27	32.76	71.88	60.00
Neither agree nor disagree	19.46	27.59	-	-	32.89	36.21	12.50	13.33	36.24	43.10	12.50	26.67
Rather disagree	4.70	6.90	9.38	6.67	5.37	1.72	3.13	6.67	6.04	8.62	9.38	6.67
Strongly disagree	5.37	6.90	3.13	6.67	6.71	13.79	6.25	-	4.70	5.17	-	-
Total:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

An analysis of the answers of students and teachers to the statement "I believe that I can influence sustainable development in my school through my actions" (Table 2) revealed that 33.56% of learners and 91.17% of teachers in the BSHS and 55.09% of learners and 80% of students in RSHS1 gave affirmative answers. In the field of sustainable development, everyone's involvement was important. An analysis of the answers of learners and educators to the statement "I believe that it is important what everyone does for sustainability" revealed that 59.73% of students and 96.88% of teachers in the BSHS and 77.59% of students and 93.33% of teachers in RSHS1 answered in the affirmative. An analysis of the answers of students and teachers to the statement "I want to act for sustainable development in my school" showed that 41.61% of students and 87.50% of teachers in the BSHS and 62.07% of learners and 96.67% of teachers in RSHS1 gave affirmative answers. It should be noted that the students' answers "Neither agree nor disagree" to the statements in Table 2 indicated that they did not have a specific opinion on whether their actions in school were sustainable and on their willingness to act for sustainability. Consequently, the students were not fully sure how and if they could influence sustainable development in their school through their actions. It should be noted that the teachers were more likely than the students to believe that they could influence sustainable

development in their school through their actions, that it was important what everyone did for sustainability and that they were willing to act for sustainability. The teachers' responses also indicated an awareness that they could influence sustainability through their personal actions, yet a lower willingness to take action.

Table 2 Actions for sustainable development by students and teachers, % (authors' calculations, N=207, N=45)

Statement / Answer	I believe I can influence sustainable development in my school through my actions				I believe it is important what everyone does for sustainability				I want to take action for sustainable development in my school			
	Students		Teachers		Students		Teachers		Students		Teachers	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	6.71	18.97	58,82	20.00	22.15	36.21	62.50	73.33	8.72	22.41	37.50	40.00
Rather agree	26.85	36.12	32,35	60.00	37.58	41.38	34.38	20.00	32.89	39.66	50.00	46.67
Neither agree nor disagree	44.30	27.59	8,82	13.33	26.85	13.79	3.13	-	43.62	24.14	12.50	6.67
Rather disagree	14.09	12.07	-	-	8.72	6.90	-	-	7.38	8.62	-	-
Strongly disagree	8.05	5.17	-	6.67	4.70	3.72	-	6.67	7.38	5.17	-	6.67
Total:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

An analysis of the students' opinions on the statement "I believe it is important to gain knowledge about the environment and climate change" revealed that 61.07% of BSHS students and 77.59% of RSHS1 students gave affirmative answers (Table 3).

Table 3 Students' opinions on the need for knowledge about sustainable development, % (authors' calculations, N=207)

Statement / Answer	I believe it is important to gain knowledge about the environment and climate change		I acquire knowledge about sustainable development and climate change as part of my school curriculum		I believe that sustainability issues should be discussed more often within the curriculum	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	23.49	36.21	14.77	20.69	12.75	27.59
Rather agree	37.58	41.38	38.26	34.48	32.89	36.21
Neither agree nor disagree	24.83	17.24	30.87	32.76	34.90	25.86
Rather disagree	6,04	0	10.07	6.90	11.41	6.90
Strongly disagree	8.05	5.17	6.04	5.17	8.05	3.45
Total:	100.00	100.00	100.00	100.00	100.00	100.00

Of the total, 53.03% of BSHS and 55.17% of RSHS1 students gave affirmative answers to the statement "I acquire knowledge about sustainable

development and climate change as part of my school curriculum". Of the total, 45.64% of BSHS and 59.80% of RSHS1 students gave affirmative answers to the statement "I believe that sustainability issues should be discussed more often within the curriculum". It should be noted that the students' answers "Neither agree nor disagree" indicated that they did not fully understand the concept of sustainable development and factors in it, therefore, not clearly identifying whether these topics related to sustainability issues.

Based on the students' questionnaire data, it was established whether there was a statistically significant correlation between their opinions on action for sustainable development and knowledge about the environment and climate change (Table 4).

Table 4 Matrix of correlations between the students' opinions on action for sustainable development and knowledge about the environment and climate change (authors' calculations with SSPP, N=207)

Statement	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**
I believe I can influence sustainable development in my school through my actions	-					
I believe it is important what everyone does for sustainability	.625*	-				
I want to take action for sustainable development in my school	**.643***	.570*	-			
I believe it is important to gain knowledge about the environment and climate change	.576*	**.654***	.572*	-		
I acquire knowledge about sustainable development and climate change as part of my school curriculum	.476*	.439*	.500*	.629*	-	
I believe that sustainability issues should be discussed more often within the curriculum	.550*	.592*	.621*	**.733***	.555*	-

**significant at level 0.05 level*

Table 4 shows that there was a moderately strong correlation ($0.5 < |r| < 0.8$) between the following student opinions: it is important to gain knowledge about the environment and climate change, and sustainability issues should be discussed more often within the curriculum ($r = 0.733$); it is important to gain knowledge about the environment and climate change and it is important what everyone does for sustainability ($r = 0.654$), I can influence sustainable development in my school through my actions and I want to act for sustainable development in my school (0.643). The hypothesis that knowledge and understanding of sustainable development determine individuals' actions for sustainable development was confirmed.

The correlation analysis showed that there was a moderately strong statistical correlation between the knowledge-based belief that each individual's actions can influence sustainable development and the desire to

act for sustainability, as well as the need to acquire additional knowledge related to the environment and climate change. It could be concluded that awareness of sustainable development contributes to sustainable development and that it is important to address sustainable development issues in schools and integrate them into the curricula to introduce sustainable habits in society.

Table 5 Students' knowledge of sustainability promotion, %
(authors' calculations, N=207)

Statement / Answer	I know how to act in school to promote sustainable development		I know what to do at home to promote sustainable development		I want to learn more at school about how we can build a more sustainable future together	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	8.72	12.07	20.81	22.41	14.09	17.24
Rather agree	34.23	25.86	35.57	41.38	28.86	36.21
Neither agree nor disagree	36.91	37.93	32.21	24.14	42.28	36.21
Rather disagree	12.08	12.07	6.04	3.45	8.05	5.17
Strongly disagree	8.05	12.07	5.37	8.62	6.71	5.17
Total:	100.00	100.00	100.00	100.00	100.00	100.00

Table 5 shows the students' knowledge of sustainability promotion and of how to act for sustainability at school, at home and a desire to learn more about these issues. The students rated their knowledge of how to act at home rather than at school to promote sustainable development higher. It should be noted that around 37% of students were not sure whether their knowledge of what to do at home to promote sustainable development was sufficient. An analysis of the students' responses to the statement "I want to learn more at school about how we can build a more sustainable future together" revealed that 42.28% of BSHS and 36.21% of RSHS1students answered "Neither agree nor disagree". This shows that the students did not have a certain opinion about their willingness or, on the contrary, unwillingness to acquire more knowledge in school about how we can build a more sustainable future together.

Based on the data from the student survey, it was established whether there were statistically significant correlations between the students' concern about climate change and environmental problems and their knowledge of sustainability issues (Table 6).

An analysis of the correlation between the students' anxiety about climate change and environmental problems and knowledge on promoting sustainability revealed that a moderately strong correlation ($0.5 < |r| < 0.8$) existed between the opinions on how to act at school to promote sustainable development and how to act at home to promote sustainable development ($r=0.793$) and the opinions on how to act at school and at home and the

desire to gain more knowledge about how to build a sustainable future (r=0.513 un r=0.510).

Table 6 Matrix of correlations between the students' concerns about climate change and environmental problems and their knowledge about promoting sustainability (authors' calculations with SPSS, N=207)

Statement	**1.**	**2.**	**3.**	**4.**
1. I am concerned about climate change and environmental problems	-			
2. I know how to act in school to promote sustainable development	.164*	-		
3. I know what to do at home to promote sustainable development	.169*	**.793***	-	
4. I want to learn more at school about how we can build a more sustainable future together	.265*	**.513***	**.510***	-

**significant at level 0.05 level*

The survey data showed that 34.38% of BSHS teachers took professional development courses on sustainability and 26.67% of RSHS1 teachers. The problem of the ability of teachers to integrate sustainable development issues into their subjects is relevant because the possession of relevant knowledge by teachers is important for students' knowledge about sustainability (Table 7).

Table 7 **Teachers' knowledge of sustainability promotion, %** (N=207) (authors' calculations)

Statement / Answer	I have enough knowledge to integrate sustainability issues into the subject I teach		I know how to act to promote sustainable development at the personal level		I know what to do at home to promote sustainable development		I want to learn more at school about how we can build a more sustainable future together	
	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1	BSHS	RSHS1
Strongly agree	12.50	26.67	18.75	26.67	25.00	26.67	25.00	6.67
Rather agree	53.13	46.67	50.00	46.67	68.75	53.33	50.00	80.00
Neither agree nor disagree	31.25	6.67	25.00	26.67	6.25	20.00	15.63	13.33
Rather disagree	-	50.00	6.25	-	-	-	6.25	-
Strongly disagree	3.13	-	-	-	-	-	3.13	-
Total:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

However, despite the survey data on professional development courses on sustainability, a significantly higher proportion of teachers when rating their knowledge about how to integrate sustainability issues in their subjects, as well as about the development of sustainability at the personal level, the development of sustainability at home and the desire to gain more knowledge about how to create a more sustainable future, answered in the affirmative.

Based on the data from the teacher survey, it was established whether there were statistically significant correlations between a professional

development course on sustainability and knowledge about sustainability issues (Table 8).

Table 8 Matrix of correlations between taking a professional development course on sustainability by teachers and knowledge about sustainability (authors' calculations with SPSS, N=57)

	1.	2.	3.	4.	5.
1. I have completed professional development courses on sustainability	-				
2. I have enough knowledge to integrate sustainability issues into the subject I teach	-.352*	-			
3. I know what to do to promote sustainable development at the personal level	-.342*	**.775***	-		
4. I know what to do at home to promote sustainable development	-.138*	.609*	**.690***	-	
5. I want to learn more at school about how we can build a more sustainable future together	-.143*	-.008*	.109*	.165*	-

**significant at level 0.05 level*

An analysis of the correlation between taking a professional development course on sustainability and knowledge about sustainability revealed that a moderately strong correlation ($0.5 < |r| < 0.8$) existed between the opinions that there was enough knowledge to be able to integrate sustainability issues into the curriculum in the subject and current knowledge of how to act to promote sustainable development at the personal level (r=0.775) and knowledge of how to act at school and knowledge of how to act at home (r=0.690).

The participation of teachers in professional development courses on sustainability was passive and could contribute to the transfer of knowledge on sustainable development issues in the subjects they taught. However, no strong correlation was found between taking a professional development course on sustainability and knowledge of sustainability issues.

Being aware of the gravity of the current situation and the need for immediate action to promote sustainability, the authors believe that there is a need for even greater national attention to ESD, which has already been identified as a global priority. The absence of a legal framework for the inclusion of sustainability issues in the curricula of general education schools showed that the issues were subject to subjective interpretation. The teacher had autonomy in planning the topics to be taught and how to achieve the objectives set for students, which in turn suggested that the teacher had some autonomy over the curriculum. The authors argue that environmental and sustainability issues were often not central to the curriculum, as the teacher tended to be concerned with the performance of students in their subject, and this was particularly important in the case of centralized

examinations, where the expectations of parents, the school and the local authority needed to be met.

Conclusions and suggestions

Sustainability is about a balance between rationally meeting the needs of present and future generations or using resources rationally without risking scarcity in the future. Education is perceived as one of the foundations for further sustainable development, as it provides answers to societal and environmental challenges. Two concepts are considered in the context of education and sustainability: ESD and GCED. The objectives of ESD cover the environmental, economic and social areas, while GCED refers to human social skills. In general, ESD and GCED are complementary and have in common the knowledge and skills that any individual can acquire at the personal and community levels, with the aim of achieving the sustainable development outcomes set.

The education industry, constantly confronted with rapidly changing public policies, faces new challenges, driven by the vital need to integrate sustainability issues into the curriculum, with the aim of changing attitudes towards environmental problems and sustainable development. The challenges for integrating ESD into the curriculum mainly relate to teachers' attitudes towards the need for and opportunities to integrate ESD into their subjects.

Sustainability was considered an important topic by the students and teachers. Most of the teachers considered their school to be a sustainable-minded school, rated their own lifestyle as sustainable and the teachers were more interested than the students in participating in events/activities on sustainability. The teachers are more likely than the students to believe that they could influence sustainable development in their school through their actions, that it was important what everyone did for sustainability and that they were willing to act for sustainability. The teachers were aware that they could influence sustainability through their personal actions, but were less willing to act.

There was a moderately strong correlation between the following student opinions: it is important to gain knowledge about the environment and climate change and sustainability issues should be discussed more often in school; it is important to gain knowledge about the environment and climate change and it is important what everyone does for sustainability; I can influence sustainable development in my school through my actions and I want to act for sustainable development in my school. The hypothesis that knowledge and understanding of sustainable development determines individuals' actions to promote sustainable development proved to be true.

The students rated their knowledge of how to act at home rather than at school to promote sustainable development higher. The students did not have a strong sense of willingness or, conversely, unwillingness to acquire more knowledge at school about how to build a more sustainable future together. An analysis of the correlation between the students' concern about climate change and environmental problems and their knowledge of how to promote sustainability revealed that there was a moderately strong correlation between opinions on how to act at school to promote sustainable development and knowledge about how to act at home to promote sustainable development and knowledge about how to act at school and at home and the desire to acquire more knowledge about how to build a sustainable future together.

A significantly higher proportion of teachers responded affirmatively when evaluating their knowledge about integrating sustainability issues into the subjects they taught, sustainability development at the personal level, sustainability development at home and the desire to gain more knowledge about how to build a more sustainable future together.

The participation of teachers in professional development courses on sustainability was passive and could contribute to the transfer of knowledge on sustainable development issues in the subjects they taught. However, no strong correlation was found between taking a professional development course on sustainability and knowledge of sustainability issues.

The Ministry of Education and Science of the Republic of Latvia, in cooperation with higher education institutions, should, when developing and accrediting curricula in educational sciences, provide for the study of sustainable development topics, thus preparing new teachers to integrate sustainable development issues into the subjects they taught.

It should be made compulsory for the administrations of general education institutions to ensure that all teachers are trained, thereby regularly renewing their knowledge about ESD, and to hold awareness-raising activities in schools with the involvement of students.

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