European Journal of Science and Mathematics Education, 2024, **12**(3), 356-373
ISSN: 2301-251X (Online)

OPEN ACCESS

Research Article

Education for sustainable development in primary school: Understanding, importance, and implementation

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Citation: Lamanauskas, V., & Malinauskienė, D. (2024). Education for sustainable development in primary school: Understanding, importance, and implementation. *European Journal of Science and Mathematics Education, 12*(3), 356-373. https://doi.org/10.30935/scimath/14685

ARTICLE INFO

Received: 21 Mar 2024
Accepted: 3 Jun 2024

ABSTRACT

There is no doubt that education for sustainable development (ESD) is important because it covers all areas: social, emotional, intellectual, physical, moral, etc. ESD helps people acquire the skills, knowledge, and values necessary for a successful life and a constructive contribution to society. If earlier early ESD was not at the centre of attention, recently it has become increasingly clear that early education has great potential for fostering values, behaviours, and skills that contribute to sustainable development. Despite this, ESD remains problematic due to the inadequate preparation of pre-service primary teachers in this area. It is obvious that ESD implementation in primary education is still poorly integrated.

Empirical qualitative research aimed to reveal how pre-service primary school teachers understand ESD in primary school. Generally, 86 students from two Lithuanian universities, pre-service teachers of preschool and primary education, took part in the research. Verbal research data were analysed using the quantitative content analysis method.

The results suggest that although ESD in early childhood is understood as significant and reasonable, however, the understanding of pre-service teachers is rather one-sided. ESD is understood as social welfare, while the natural and physical environment is the least expressed in their understanding structure. Meanwhile, the implementation of ESD is understood as a normal educational process, applying known techniques and methods. It is necessary to strive for the young generation to be characterised by responsibility, a sense of community, conservation, and citizenship, to understand the harmony of the surrounding world and their activities. For that purpose, changes in the education are needed to integrate the necessary ESD elements, including both managerial and educational processes.

Keywords: quantitative content analysis, education for sustainable development, qualitative research, primary school, pre-service teachers

INTRODUCTION

Current education undoubtedly recognises that child development is not just about academic performance/achievements. This, in turn, includes emotional, creative, mental, and physical development. In primary school, children learn to communicate with others, solve problems, create, listen, and express their emotions. These are essential skills for their whole life. Education is one of the main tools for achieving sustainability. People all over the world recognise that the current trends in economic development are not sustainable and that public awareness, education and training are key tools that can ensure a more sustainable society. The ability to live properly (sustainably) and efficiently manage and use natural resources is extremely important. The action programme for the implementation of sustainable development, "Agenda 21," and the declaration adopted in Rio de Janeiro (1992) indicated the main principles of sustainable

development. It is obvious that sustainable development is impossible without broad public participation in the adoption and implementation of sustainable development decisions at various levels. Researchers fairly unanimously state that sustainable development and education are two closely related concepts (Filho, 2010a; Mammino, 2011; Pivorienė, 2014), and education plays a key role in strengthening society's abilities to solve today's most relevant environmental, climate change, and other problems (Agbedahin, 2019; Holfelder, 2019). Moreover, it is especially important for primary school teachers because they play a very important role in educating children about sustainable development. Therefore, the concept of sustainable development is extremely important for primary school teachers to prepare them for their future careers in this field (Nguyen et al., 2022).

On the other hand, research shows that early education has great potential in fostering values, behaviour, and skills that contribute to sustainable development, help form adequate relationships with nature, and become active community citizens capable of understanding social and environmental issues (Kiesnere & Baumgartner, 2019; Somerville & Williams, 2015). Balancing the social, economic and environmental/natural dimensions of education for sustainable development (ESD) requires an integrated approach. The primary curriculum must not only focus on socio-economic aspects (e.g. values, entrepreneurship, responsible consumption, etc.) but also on environmental issues such as climate change, biodiversity conservation, waste management and the conservation of natural resources. Some researchers tend to emphasise the ecological/environmental benefits of sustainable development (Čiegis & Pečkaitienė, 2013; Damijonaitytė & Vilutienė, 2016), while others give a greater role to the socio-economic sphere (Balčiūnaitienė & Petkevičiūtė, 2018; Šimanskienė & Petrulis, 2014). The optimum position is that no one area should be singled out, as sustainable development encompasses all three areas: social, economic and ecological/environmental protection. Therefore, it is obvious that ESD should start from an early age as this will also give children and youth more hope for the future (Vesterinen & Ratinen, 2024). Also, at this stage, the child begins to distinguish himself from the environment, and an emotional and value attitude towards the environment, nature, himself, other people, etc., is formed (Lamanauskas, 2023). Finally, ESD in early childhood is important as a foundation for lifelong learning and citizen participation (Asano, 2011).

It is completely understandable that the competence of primary school teachers is very important for ESD because during this period children are especially influenced and formed accordingly as personalities. These teachers must be prepared not only to promote academic teaching/learning but also to develop children's awareness of sustainable development and global challenges. Teachers must understand the principles of sustainable development and be able to convey these principles in understandable language to children. Moreover, they need to continuously improve their competencies in this area (Alguren, 2021; Cheng et al., 2023; Redman & Wiek, 2021). However, the training of pre-service teachers for ESD is no less important. Studies show that, in general, students' knowledge in this area is rather superficial and not always adequate. The study conducted in Finland showed that although students get the most information about education on sustainable development questions from television and newspapers, almost the same amount of it they get from the internet, and lectures at university are the fourth source of information (Kukkonen et al., 2012). The study conducted in Spain showed the need to develop preschool teacher ESD through experiential, interdisciplinary, collaborative, and critical education plans, and projects (Lorente-Echeverría et al., 2022).

National Context

Various projects and scientific research in the field of sustainable development and its links with education have been carried out in Lithuania for several decades. Education is not only an integral part of sustainable development but also the main tool for achieving the goals of sustainable development. Already in 2018–2020, it was planned to review and update education programmes by integrating sustainable development, creativity, entrepreneurship, financial literacy, solving problems in cooperation, natural sciences, and other topics, to introduce a methodology for assessing individual student progress, to adjust the examination system, etc. (Ministry of Environment of the Republic of Lithuania, 2018).

In Lithuanian higher education institutions, environmental, social, and economic challenges are solved through studies, scientific research, projects, and other academic and non-academic activities, in order to contribute to safe, open, and sustainable community and society creation. However, it is not always possible to achieve the set goals and desired results. In 2006, the study "Teacher training in Lithuanian higher

education institutions in the context of sustainable development education" was conducted. According to the data of this study, the study programmes for the training of teachers do not reveal the whole of sustainable development education, which includes environmental, economic, and social aspects of society's development (Jucevičienė, 2006).

In 2018, the scientific project "Behave sustainably: psychological mechanisms of environmentally friendly behaviour" was initiated, which is the first in Lithuania to systematically study the environmentally friendly behaviour of young people (9^{th}-10^{th} grade students) and the factors determining it from the perspective of environmental psychology. The results obtained during the project provide evidence-based knowledge and tools that can help solve climate change and ecological crisis problems, enabling young people to behave in environmentally friendly ways (Balundė et al., 2021).

Research on ESD in Lithuania is focused on separate aspects of the phenomenon to be analysed. The issue of sustainable development is still insufficiently researched in general education schools (Galkutė, 2005; Pivorienė, 2014), although there are a lot of challenges in this context. Environmental citizenship is generally not considered a priority area in Lithuanian education; therefore, it is carried out chaotically, it is not included in formal education, and the necessary resources are not allocated to this area (Poškus et al., 2019). Analysing formal natural science education, teachers experience problems related to the teaching process: lack of tools, low motivation of students to learn, and deficiencies in teaching content. A large number of teachers also experience social-organisational problems when teaching natural subjects: lack of time, unfavourable conditions, and lack of methodological support (Lamanauskas & Augienė, 2019). Another important topic in the problems of sustainable development is health promotion issues. A study conducted by Lamanauskas et al. (2021) on factors promoting, limiting, and determining the effectiveness of the integration of health education into preschool education programmes, and the research on the possibilities of their improvement showed that appropriate preparation of teachers, purposeful activities of the institution, community involvement in health education remain essential components determining the effectiveness of health education, however, there remain many unexploited opportunities in the improvement of health education. The situation of ESD in Lithuanian higher schools is poorly researched, so it is likely that the conducted research will increase the understanding of the training of future preschool and primary school teachers for ESD. The study also draws the attention of curriculum/subject/module developers to the importance of developing the knowledge and competences teachers need in ESD through subjects and teaching practice. The practical skills, subject/professional knowledge and competences in the field of ESD acquired during the study will enable future teachers to work in the updated pre-primary and primary education curricula.

Research Gap

It is completely understandable that teacher competencies, and in this case in the field of ESD, have a direct impact on the younger students' natural science literacy in general and enable them to engage in various practical activities in the field of sustainable development. The role of primary school teachers becomes an essential aspect of ESD. Effective primary school teachers play a very important role educating a young person able to live sustainably, who implements a range of practices and habits to reduce their ecological footprint and to adapt to the principles of sustainable living. However, future primary school teacher preparation in the field of ESD remains insufficient, and changes are slow. Therefore, it is important to know pre-service primary school teachers' position on the issue of sustainable development, to understand what changes are needed in the organisation of primary education in order to successfully implement sustainable development. It can reasonably be said that the changes in teacher preparation focused on sustainable development are fragmented, not covering all possibilities, and are therefore taking place so slowly and without a clear strategy and vision. According to Fischer et al. (2022), it is necessary to strengthen the links between general teacher education and Teacher Education for Sustainable Development (TESD) improving the quality of education in general.

The aim of the study was to analyse the position of students, pre-service preschool and primary education teachers, on the issue of ESD on the aspects of concept, role in forming a sustainable society, organisation in a primary school, teacher training, etc. Three research questions were formulated:

1. How do pre-service teachers understand ESD?
2. How do pre-service teachers understand the importance of education in forming a sustainable society?
3. What is pre-service teachers' position on the organisation, realisation, and improvement of ESD in primary school?

RESEARCH METHODOLOGY

General Characteristics

The research is qualitative and pilot in nature (Kivunja & Kuyini, 2017). It is specifically recognised as "basic or generic qualitative research" (Merriam, 1998). The aim is to go deep into pre-service teachers' experience on the issue of ESD and to create a better understanding of the researched phenomenon (Stenbacka, 2001).

Qualitative research was chosen because it is a descriptive and inductive method that aims to extract meaning from research participants' attitudes and forms conditions for gathering and presenting data in detail from a holistic point of view (Yildirim & Simsek, 2011). Such research helps to better understand the experience, perception and (or) behaviour of the researched people and the meanings associated with them (Agius, 2013).

The research was conducted from January to February 2024. It is based on the premise that studies of students' opinions and evaluations are important because they allow identifying current problems, clarifying the already known ones, and predicting possibilities for improving the studies.

Sample

Generally, 86 university students, pre-service preschool and primary education teachers took part in the research. The research sample consists of students who study in Vilnius and Siauliai. The majority of students (N = 67) study at the Siauliai Academy of Vilnius University, and the rest (N = 19) – at Vilnius University. All the respondents were female. Purposive sampling (a non-random) was used in this research (Fraenkel & Wallen, 2009) and participants ought to be enrolled at a teacher-education program. In this type of sampling the selection of participants is not based on randomization or any specific criteria beyond their availability and willingness to participate in the research. Such a sample selection strategy was used because it is quite difficult to reach the entire population and, in addition, the population is relatively small, and the research focuses only on a defined profile of university students, the population itself is sufficiently homogenous. Conversely, the researchers evaluated the respondents' availability and preparedness for taking part in the research. It was considered that in situations when the population is hidden or difficult to reach and researchers find it difficult to interact with and obtain access to these people, probability sampling is insufficient (Berndt, 2020). The methodological perspective was considered by the researchers, who believed that valuable data might be obtained by carefully conducting the study utilizing a purposive sampling methodology and limiting biases and uncertainty (Golzar et al., 2022).

Qualitative sample size may best be determined by the time allotted, resources available, and study objectives (Patton, 1990). According to Creswell (1998), a range of 20-30 is fully acceptable for qualitative samples. Thus, it is assumed that such a sample is fairly representative in qualitative research and allows for appropriate conclusions to be drawn. In addition, an in-depth exploration of the phenomenon (Hong & Cross Francis, 2020), rather than representing the study population is the main focus of this research. The results received are not used to generalise the population (Yin, 1994).

The survey of students was carried out in auditoriums, by submitting prepared questionnaires. All students were informed about the objectives, their participation was voluntary and anonymous. Verbal consent was obtained from the students to participate in the survey. The subjects were informed that their individual opinions will not be announced publicly and that their comments and the context of the expressed opinion are important for the study itself. The participants also were informed that their identity would not be revealed, and the data was only gathered for research purposes.

Instrument

Open-ended questions were used in the research. The participants were asked the following questions/tasks:

- Sustainable development. How do you understand/interpret it?
- Education for sustainable development. How do you understand/interpret this?
- What should education for sustainable development be like in primary school? Comment.
- What is the role of primary education in forming a sustainable society? Comment.
- Do you think it is reasonable/rational to implement education of sustainable development in primary school? Comment.
- How to involve primary school students in the promotion of sustainable development? Comment.
- How could the training of pre-service primary school teachers for sustainable development be improved? Comment.

The formulations of the research questions were discussed with two natural science education experts. The questions cover students' general understanding of ESD and their understanding of the importance, organisation, and implementation of such education, as well as improvement in primary school. The prepared questions were tested with two students of the preschool and primary education study programme who did not participate in this study.

Data Analysis

The collected qualitative (verbal) data of the study were analysed using quantitative content analysis. Devi-Prasad (2019) defined content analysis as reducing a large portion of words obtained through qualitative data in order to make meaning of the data by detecting trend and meaning. This made it possible to analyse the textual /verbal data objectively and systematically and draw appropriate conclusions. Content analysis as a method is a scientifically based and effective solution that allows drawing reasonable conclusions from various sources of textual information (Corners & Matthies, 2014). The analysis procedure included several essential stages, but the most important was multiple reading and analysis when relevant semantic units were distinguished in the information array. In other words, the analysis included content preparation, categorisation (the content is divided into subcategories and categories), data collection (information from the content is collected according to semantic units, the process was carried out manually, when the researchers read the content and distinguish essential semantic units), data analysis (the analysis of frequently occurring semantic units was performed), and interpretation. This is an important aspect of data analysis because raw data are organised into categories or themes based on findings and interpretations (Zhang & Wildemuth, 2009).

The "triangulation of analysts" technique (Patton, 2002) was employed to assure reliability in the qualitative research. Data analysis was performed by two researchers independently (two separate people coded the data collected, and the findings were compared and changed based on agreement). The data and categories have been reviewed several times. In the final step, the researchers sought consensus on the assignment of subcategories to categories. The adjustment and coordination took place in two stages. There was a one-week interval between the first and the second co-ordination stages. The co-ordination degree was higher than 80%. Miles and Huberman (1994) stated that it is enough for the reliability of data to find correspondence percentage higher than .70. The significance and completeness of the findings were continuously checked by the researchers. In other words, the researchers sought to present clearly and accurately the positions (point of view) of the research participants, which is extremely important for the credibility of the qualitative research (during research design and implementation), (Noble & Smith, 2015).

RESEARCH RESULTS

It has been analysed how students, pre-service primary school teachers, understand sustainable development. Having performed content analysis of submitted answers, three categories were distinguished: *social welfare*, *natural environment*, and *physical and social environment* (**Table 1**).

Table 1. Concept of sustainable development [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Social welfare 45 (52.2)	Overall welfare 19 (22.0)	Sustainable development aims to ensure human welfare today and focuses on human welfare in future.	7 (8.0)
		It is the goal to develop overall welfare for the present and for the future.	3 (3.5)
		Sustainable development is a balance in everything.	3 (3.5)
		Whole society development successfully improving our future.	2 (2.3)
		These are the kind of economic and social decisions that enable a balanced pursuit of economic growth.	2 (2.3)
		Support to less developed countries.	1 (1.2)
		It is striving for equality.	1 (1.2)
	Life quality 17 (19.7)	Changes to ensure humanity's existence as long as possible.	6 (7.0)
		Improving people's quality of life.	4 (4.6)
		Actions that do not threaten human survival in the future.	3 (3.5)
		It is an activity that reduces poverty and deprivation and helps to improve the quality of life without harming nature.	2 (2.3)
		Development of a full-fledged, versatile person.	2 (2.3)
	Rational satisfaction of needs 9 (10.5)	It is the development that meets current human needs.	5 (5.8)
		It is the ability to meet human needs in relation to nature.	3 (3.5)
		Frugal life.	1 (1.2)
Natural environment 24 (27.9)	Rational use of natural resources 14 (16.3)	Conservation and preservation of natural resources.	8 (9.3)
		Purposeful/targeted use of natural resources.	3 (3.5)
		Optimal use of natural resources.	2 (2.3)
		Efforts to preserve resources on our planet for future generations.	1 (1.2)
	Nature conservation 10 (11.6)	Overall preservation of nature.	5 (5.8)
		Preservation of natural (living) diversity.	3 (3.5)
		Sustainable development is related to economic growth, quality of services and nature conservation.	2 (2.3)
Physical & social environment 17 (19.9)	Concern for environment 10 (11.7)	Creating a better environment in which we live.	4 (4.6)
		Creating a safe environment.	3 (3.5)
		Sustainable development is about how people's actions shape what happens around them.	1 (1.2)
		Everyone has the same conditions to know, use and protect the surrounding environment.	1 (1.2)
		Sustainability is harmony with the surrounding environment.	1 (1.2)
	Ecological concern 7 (8.2)	A way of life that encourages taking care of the environment.	3 (3.5)
		It is an integrated approach that considers ecological, economic, and social aspects to ensure a balance between the environment, society and economy.	2 (2.3)
		It is an effort to preserve the ecological balance.	1 (1.2)
		It is an idea or philosophy that aims to balance social, economic, and ecological efficiency.	1 (1.2)

Note. Totally 86 semantic units were extracted

As **Table 1** shows, the first category *social welfare* (52.2%) had the highest value when discussing the opinions of future teachers about the concept of sustainable development. Opinions were summarised in 3 subcategories: *overall welfare* (22.0%), *life quality* (19.7%), and *rational satisfaction of needs* (10.5%). The greatest attention in the first subcategory was given to the opinions of subjects who expressed concern for overall welfare development and assurance not only in the present but also in the future. The second subcategory included the expressed thoughts of pre-service teachers, which clearly identified the challenges of improving the quality of life. The statements of the third subcategory included the attitudes of the subjects, focused on the importance and possibilities of satisfying people's needs.

The second category *natural environment* (27.9%) by value made up less than a third in the structure of selected categories. It consisted of two subcategories of which the first subcategory *rational use of natural resources* (16.3%) revealed itself more clearly according to importance. This subcategory included the opinions of the subjects, which focused on the conservation, optimal, purposeful use, and preservation of natural resources. The second subcategory *nature conservation* (11.6%) revealed the respondents' concern about overall preservation of nature and its diversity.

The third category *physical and social environment* (19.9%) also consisted of two subcategories: *concern for the environment* (11.7%) and *ecological concern* (8.2%). In the first subcategory, prospective teachers emphasised the importance of creating a better and safer surrounding environment. The second subcategory was dominated by the opinions that clearly defined the ecological, social, and economic aspects of environmental protection.

The analysis of the research data presented shows that the concept *sustainable development* of the pre-service primary school teachers is clear enough, integrating the aspects of social welfare, natural

Table 2. Concept of education for sustainable development [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Importance of ESD 32 (48.8)	Importance of ESD 17 (26.2)	Education focused on promoting nature conservation.	7 (11.1)
		These are educational solutions that introduce participants of education system to sustainability, encourage and teach the proper use of natural resources.	4 (6.1)
		Equivalent and quality education.	2 (3.0)
		Education is one of the most important components for the success of sustainable development.	1 (1.5)
		Education that adapts to students' current needs, difficulties, current topics, etc.	1 (1.5)
		Education is intended for students to be interested in their own and others' future well-being.	1 (1.5)
		Education focused on making students aware of the consequences of their own and other people's actions.	1 (1.5)
	Meaning of ESD 15 (22.6)	It is education raising public awareness.	4 (6.1)
		This is education about conservation and management of natural resources.	3 (4.5)
		To convey knowledge about nature conservation to the public.	2 (3.0)
		Dissemination of knowledge and information on sustainable development.	2 (3.0)
		Education that can ensure a more harmonious society.	1(1.5)
		Most environmental, economic development and social development problems can be solved with the help of education.	1 (1.5)
		It is education that promotes multifaceted growth/potential.	1 (1.5)
		Providing equal opportunities for learning.	1 (1.5)
Process of ESD 34 (51.2)	Environmental education 17 (25.6)	Education to know the environment around us.	5 (7.6)
		Teaching/learning to understand that the world is diverse, there are different people, different problems.	3 (4.5)
		This is the development of the ability to preserve a harmonious community, the environment.	2 (3.0)
		Teaching/learning about the diversity of the world and oneself.	2 (3.0)
		Education about natural resources, their importance.	2 (3.0)
		Teaching to protect not only yourself, others but also the planet.	2 (3.0)
		Purposeful teaching to protect the planet and all its resources.	1 (1.5)
	Ecological behaviour 9 (13.6)	Teaching to care for and protect the environment.	5 (7.6)
		Teaching that everything is connected.	2 (3.0)
		Teach students about sustainable behaviour.	1 (1.5)
		It is the development of an understanding of sustainable development.	1 (1.5)
	Practical environmental activities 8 (12.0)	Education of students, using various methodological tools, about sustainable development.	3 (4.5)
		Educational activities encouraging children to protect the world around us.	2 (3.0)
		These are talks, activities about garbage sorting, greenhouse effect, etc.	1 (1.5)
		Encouraging students to protect the environment in which they live is growing.	1 (1.5)
		These are various tools and methods, with the help of which ecological and sustainable ideas are implemented for educational purposes.	1 (1.5)

Note. Totally 66 semantic units were extracted

environment, and the development of physical and social environment. On the other hand, there is a clear need to improve the training of future primary school teachers in the field of ESD, and for this it is important to use integrated and holistic strategies. In particular, sustainable development goals need to be integrated into teacher education programs so that future teachers understand the global challenges and the necessary/imminent solutions. The second key strategy is interdisciplinary teaching. The concepts of education for sustainability need to be integrated into all subjects of the primary school curriculum in order to realise a holistic approach.

It is obvious that ESD is a significant component of the educational process in primary school. Two categories were distinguished: *the importance of ESD* and *the process of ESD*. The results of the concept of ESD are presented in **Table 2**.

The abundance and variety of statements made by future primary school teachers when discussing the concept of *ESD* allowed distinguishing two almost equal according to importance categories: *the importance of ESD* (51.2%) and *the process of ESD* (48.8%). The first category consisted of two subcategories: *the importance of ESD* (29.2%) and *the meaning of ESD* (22.6%). The first subcategory was dominated by highlighting the importance of education as an educational component/purposeful educational activity for education in the context of sustainable development. The second subcategory included the opinions of the respondents, which were related to educational assistance and goals aimed at the formation of sustainable society and the processes of ESD. The second category *the process of ESD* (48.8%) consisted of three subcategories: *environmental education* (22.6%), *ecological behaviour* (13.6%), and *practical environmental activities* (12.0%). The first subcategory contained the content important for environmental education: teaching to know the surrounding environment, which is one of the ways of learning about the world and its diversity, teaching to understand the importance of natural resources and other environmental phenomena, which, according to

Table 3. Education for sustainable development in primary school [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Implementation strategy of ESD 60 (52.4)	Integrated ESD 40 (35.0)	Integrated into subject content (integration into other educational subjects).	16 (14.4)
		Education for sustainable development should be /experiential.	12 (10.3)
		To provide information through experiential activity.	5 (4.3)
		Should be engaging in various activities related to sustainable development	4 (3.4)
		Education should be flexible.	2 (1.7)
		ESD in primary school should focus on children's understanding of the interaction between the environment, society, and the economy.	1 (0.9)
	Goals of ESD 20 (17.4)	Children should be introduced to the prevailing problems in the world and ways to solve them.	7 (6.0)
		Children should be introduced to sustainable development.	3 (2.6)
		To provide basic knowledge that students will expand and deepen as they study further.	2 (1.7)
		As great as possible knowledge provision about the current existing situation.	2 (1.7)
		To develop topics such as citizenship, democracy and governance, justice, security, human rights, health, cultural diversity, environmental protection, natural resource management, biological and landscape diversity.	1 (0.9)
		To form opinion about a more sustainable and harmonious environment.	1 (0.9)
		Encourage students to be interested and ask questions about sustainable development.	1 (0.9)
		Ensure sustainable education.	1 (0.9)
		Foster human values.	1 (0.9)
		Ensuring quality primary education.	1 (0.9)
Process of formal and informal ESD 39 (33.7)	Informal activities of ESD 26 (22.5)	Continuous conversations with students about sustainable development.	8 (7.0)
		Excursions, educational videos, social actions.	6 (5.2)
		Development of game activities.	5 (4.3)
		Organise and perform environmental activities.	4 (3.4)
		Organised environmental events.	3 (2.6)
	Formal activities of ESD 13 (11.2)	Develop students' project activities.	6 (5.2)
		Education must be modern and innovative, using practical methods so that children absorb knowledge as best as possible.	3 (2.6)
		It should be a separate learning subject (or lesson).	2 (1.7)
		Create a special programme, focused on sustainable development.	2 (1.7)
Appropriate pre-service teacher preparation for ESD 16 (13.9)	Improving future teacher training in the field of sustainable development 8 (6.9)	Properly train teachers in the field of sustainable development.	4 (3.4)
		Provide educators with more knowledge and information that could be used and incorporated to promote sustainability in educational institutions.	3 (2.6)
		ESD in primary school should be adapted to children's age and level of awareness.	1 (0.9)
	Competencies of future teacher ESD 8 (7.0)	Social responsibility development and promotion.	3 (2.6)
		Developing awareness, providing knowledge about how everything in the world is connected.	2 (1.7)
		Close and extensive cooperation with as many social partners as possible.	1 (0.9)
		Creating a harmonious educational environment.	1 (0.9)
		To promote critical thinking and creativity.	1 (0.9)

Note. Totally 115 semantic units were extracted

future teachers, are necessary for organizing the educational process of sustainable development. The second subcategory defined the importance of ecological behaviour, protecting the environment and teaching students responsible, sustainable behaviour. The third subcategory was the least significant in the assessment of the subjects, but it was important for the variety of proposed specific practical activities and methods to develop environmental knowledge and habits. Thus, *the concept of ESD,* in the assessment of pre-service teachers, is aimed at specific educational aspects of ESD at school.

It is undoubtedly significant to understand what ESD should be in primary school and how pre-service teachers understand it. Having analysed the data, three categories were distinguished: *implementation strategy of ESD*, *the process of formal and informal ESD*, and *appropriate pre-service teachers' preparation for ESD*. The results are presented in **Table 3**.

Table 3 shows that the first category *implementation strategy of ESD* (52.4%) had the largest contribution compared to the assessment of the other two categories. Implementation strategies were highlighted in two subcategories: *integrated ESD* (35.0%) and *goals of ESD* (17.4%). In the first subcategory was revealed that the role of integrated education was becoming increasingly important. This was confirmed by the respondents who claimed that ESD had to be integrated into various educational subjects. Children's experiential activities are no exception. The second subcategory included educational goals aimed at providing students with basic environmental and ecological knowledge, fostering human values, as this contributes to ensuring the quality of primary education.

Table 4. Role of education for sustainable development in shaping a harmonious society [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Formation of foundations of education for a sustainable society 62 (64.3)	The basis for sustainable development 28 (29.3)	To lay the foundation, to form a common understanding about these things.	12 (12.5)
		Lays the foundations for further education in forming a harmonious/sustainable society.	6 (6.2)
		To provide learners with the basis of knowledge and skills.	5 (5.2)
		The role of primary education in shaping a harmonious society is fundamental.	2 (2.1)
		During primary education, the student acquires basic knowledge and skills that will help him in the future.	1 (1.1)
		Primary education is the foundation from which a child's future education begins.	1 (1.1)
		To ensure quality education, collaborate and be open to new, sustainable ideas/suggestions.	1 (1.1)
	The perspective of forming a sustainable society 34 (35.0)	A very important role.	25 (25.6)
		To show students that they are part of the future.	6 (6.2)
		Primary education begins or continues the path in the development of an honest man.	2 (2.1)
		In primary education, the importance of harmony and sustainability is revealed to students.	1 (1.1)
Development of environmental literacy 34 (35.7)	Formation of environmental outlook 17 (17.7)	To form world outlook, worldview.	8 (8.3)
		To introduce to the surrounding world.	3 (3.1)
		Primary education is the first branch of formal education that has purposefully/expediently shape student's personality, value system, when we talk about biological, ecological, global phenomena, their consequences, visions, images of the future planet, etc.	2 (2.1)
		The school should foster sustainable development attitudes from childhood through formal and non-formal education.	2 (2.1)
		This is a unique opportunity to influence future citizens' attitude toward the environment, society, and economic activity.	2 (2.1)
	Formation of environmental knowledge and skills 17 (18.0)	It is important to inculcate in a child the skills of sustainability, kindness, friendliness from an early childhood.	4 (4.2)
		To provide more knowledge in order to develop a sustainable and harmonious person.	4 (4.2)
		To help the student to understand himself and to form his skills for further stages of life.	3 (3.1)
		Basic skills are formed during primary education, children see examples, copy, and this has a huge impact.	2 (2.1)
		Helps develop children's social, emotional, creative qualities.	1 (1.1)
		At school, children can develop good habits and then would engage in sustainable development without even noticing.	1 (1.1)
		Harmonious/sustainable development education already in primary school encourages children to think critically and creatively.	1 (1.1)
		Previously acquired skills and habits have more life and continuity in further human development.	1 (1.1)

Note. Totally 96 semantic units were extracted

The second category *the process of formal and informal ESD* (33.7%) included two subcategories *informal activities of ESD* (22.5%) and *formal activities of ESD* (11.2%). The results of the survey of future teachers showed that informal activities were more suitable for children's involvement in the processes of sustainable development: conversations, excursions, game activities, etc., which are not instruments of academic learning but enable children to reveal themselves more, communicate, analyse phenomena, and learn by participating, learn to live and act responsibly and protect the environment.

The third category *appropriate future teacher preparation for ESD* (13.9%), according to the respondents, was the least significant when discussing ESD in primary school. The two subcategories containing *improving future teacher training in the field of sustainable development* (6.9%) and *competencies of future teacher ESD* (7.0%) were equivalent and included important issues related to quality teacher training and the development of their competencies in the field of sustainable development.

Thus, in order for *ESD in primary school* to be successful, it is necessary to foresee the implementation strategies of ESD, properly organise the process of formal and informal ESD and pay great attention to the proper preparation of pre-service teachers for ESD.

It has been analysed how students understand the role of ESD in forming a sustainable society. Two categories were distinguished: *formation of foundations of education for a sustainable society* and *development of environmental literacy*. The results are presented in **Table 4**.

Table 4 shows that the first category *formation of foundations of education for a sustainable society* (64.3%) had the highest value compared to the second category and it consisted of two subcategories: *the perspective of forming a sustainable society* (35.0%) and *the basis for sustainable development* (29.3%). Both subcategories reflected the importance of the role of education for a harmonious society, both in the current educational

Table 5. Validity/rationality of education for sustainable development in primary school [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Validity 103 (97.2)	Age appropriateness 36 (33.8)	It is very important to start talking about it as early as possible.	10 (9.5)
		School age is suitable for forming children's correct habits, understanding of what is needed for a fulfilling future.	8 (7.5)
		Primary school children are very receptive and still "believe in the innocence of the world".	6 (5.7)
		It is important for children to understand the meaning of sustainable development already in primary school.	3 (2.8)
		It is reasonable and rational to start sustainable education in primary school.	3 (2.8)
		Yes, because the child will develop habits and attitudes towards such things from an early age.	3 (2.8)
		It is important to form an attitude towards this from the young days of a student.	1 (0.9)
		Primary education lays the foundation before the other stages of learning.	1 (0.9)
		It is necessary to educate a responsible and socially responsible citizen from an early age.	1 (0.9)
	Usefulness 35 (33.3)	Really possible and rational.	14 (13.7)
		This is useful and necessary.	12 11.3)
		Reasonable and relevant in the context of contemporary challenges, related to environmental and societal sustainability.	3 (2.8)
		It is rational because acquired knowledge and developing skills would give a positive understanding about harmonious and sustainable development and progress.	3 (2.8)
		It is rational to try to apply it to fit in today's school.	1 (0.9)
		It is important to foster sustainable development.	1 (0.9)
		In today's world, this is becoming a norm and a reality.	1 (0.9)
	Formation of a new generation 14 (13.3)	It is important that each generation and each person contribute to what will happen in the future.	10 (9.5)
		Yes, because if presented properly, a new sustainable-minded generation would be formed.	2 (1.9)
		Reasonable, because children, a new generation that must live more sustainably.	2 (1.9)
	Sustainable education literacy 14 (13.1)	Yes, it is a great foundation for the future for children.	5 (4.7)
		Sustainability education helps children understand global issues, for example, climate change or biodiversity loss.	2 (1.9)
		It helps to form a worldview, a world outlook.	2 (1.9)
		It helps children acquire healthy habits, creativity, etc.	2 (1.9)
		Sustainability education can help create a stronger and more conscious societal culture of sustainability.	1 (0.9)
		It is important to help all children develop knowledge, skills, abilities, values, and attitudes on the topic of sustainability.	1 (0.9)
		It helps shape future citizens' understanding of the environment and social responsibility.	1 (0.9)
	Teacher preparation 4 (3.7)	Of course, this only requires creative and organised educators who are interested and periodically update their knowledge.	2 (1.9)
		In primary school, it is applied during world cognition lessons.	1 (0.9)
		Yes, it shows the changed curriculum.	1 (0.9)
Unreasonableness 3 (2.8)	Irrational 3 (2.8)	Not very rational.	3 (2.8)

Note. Totally 106 semantic units were extracted

reality, starting to form the foundations of SD already in primary school, and continuing these processes in a long-term perspective at other stages of education.

The second category *development of environmental literacy* (35.7%) also consisted of two subcategories of equal value: *formation of environmental outlook* (17.7%) and *formation of environmental knowledge and skills* (18.0%). In the opinion of pre-service teachers, the formation of environmental outlook promotes students' responsibility for the preservation and survival of the environment and nature in the future.

Purposeful environmental knowledge and skill formation, thanks to which children not only get to know themselves and the environment better, but also acquire new knowledge and skills help the formation of worldview, which can probably influence the stability/improvement of the environmental situation in the future. Thus, *the role of ESD shaping a sustainable society* is very significant and can/must start from an early age and continuously take place in other stages of education, purposefully improving children's environmental literacy.

It is obvious that the majority of the respondents considered ESD in primary school to be reasonable and rational. Two categories were distinguished: *validity* and *unreasonableness*. The results are presented in **Table 5**.

Table 6. Engaging primary school students in promoting sustainable development [n (%)]

Category	Subcategory	Subcategory components	n (%)
Informal stimulating activities 61 (53.0)	Organisation of practical activities 44 (38.3)	Through projects, allowing the children themselves to get involved in the processes and present them.	18 (15.8)
		Organisation of thematic events (e.g., quizzes, excursions).	12 (10.4)
		Learning through games, game-based activities.	10 (8.7)
		Organise conversations about what is sustainable and harmonious development.	2 (1.7)
		Creativity support, by providing various creative activities.	2 (1.7)
	Increasing motivation and inclusion 17 (14.7)	Involve children in education using various promotion measures.	8 (7.0)
		Engage in this topic, promote and share an interest in harmonious/sustainable development.	2 (1.7)
		Boosting motivation.	2 (1.7)
		Promote waste sorting by explaining its importance.	2 (1.7)
		Unnaturally, no need to do it.	2 (1.7)
		Involve parents in activities so that children feel that their family also cares about it.	1 (0.9)
Formal incentive activities 54 (47.0)	Interactive educational activities 29 (25.3)	Using interactive activities.	11 (9.6)
		Integrate sustainable development topics into various/different educational subjects.	5 (4.4)
		Just organise lessons in nature.	4 (3.5)
		Integrate these topics into the subject content.	4 (3.5)
		To use educational game programmes.	3 (2.6)
		Use ICT to interest children.	2 (1.7)
	Practical educational activities 25 (21.7)	Create engaging practical activities.	15 (13.0)
		Through experiential education (organise practical/experiential activities).	4 (3.5)
		Use practical sessions, observations, discussions.	2 (1.7)
		Additional training.	2 (1.7)
		Provide practical lessons with examples.	1 (0.9)
		Give lectures on sustainable development and "mix" with practice.	1 (0.9)

Note. Totally 115 semantic units were extracted

Table 5 shows that the value of the first category *validity* (97.2%) was very high. Five subcategories were distinguished. The first subcategory *age appropriateness* (33.8%) included those pre-service teachers' opinions, which once again confirmed the position already expressed in the study that children attending preschool and primary school, within their age limits, were already ready to receive information, develop skills, and develop environmental habits, to acquire the basics of education in the context of sustainable development. In terms of value, the second subcategory *usefulness* (33.3%) was equal to the first subcategory. The content of this subcategory included the respondents' opinions that ESD was reasonable, rational, possible, and useful. In terms of value, the third and the fourth subcategories were also equal.

The subcategory *formation of a new generation* (13.3%) expressed the possibility of positive changes in the future in the field of sustainable development, which might be related to a more sustainable lifestyle of the new generation. The fourth subcategory *sustainable education literacy* (13.1%) was aimed at the development of environmental knowledge and habits. The fifth subcategory *teacher preparation* (3.7%) emphasised the importance of creative and organised educators, who were interested in and periodically updated their knowledge. In the category *unreasonableness* (2.8%) one subcategory *Irrational* (2.8%) was singled out in which negative evaluation of the respondents of ESD in primary school dominated. The obtained results clearly show that ESD was considered reasonable by future teachers.

The position of the respondents regarding the promotion of ESD and the inclusion of students in this process was analyzed. Two categories were distinguished: *informal stimulating activities* and *formal stimulating activities*. The results are presented in **Table 6**.

Table 6 shows that the values for Informal stimulating activities (53.0%) and formal stimulating activities (47.0%) were similar. Each category consisted of two subcategories. When discussing the subcategories of the first category *organisation of practical activities* (38.3%) and *increasing motivation and inclusion* (14.7%), pre-service teachers provided examples of the most popular activities (projects, quizzes, excursions, and games) during which it is appropriate to motivate, interest, encourage children to get involved or they spontaneously involve themselves in the processes of ESD.

When discussing the other two subcategories, *interactive educational activities* (25.3%) and *practical educational activities* (21.7%), future teachers' attention was directed to formal education, emphasizing the necessity of using ICT tools and interactive activities, integrating sustainable development topics into different educational subjects, or simply organising lessons in nature. Also, for better student engagement, pre-service teachers recommended creating engaging practical activities and promoting experiential education during which the child learns to understand the surrounding environment and to connect new knowledge with

Table 7. Improving pre-service teacher education for sustainable development [*N* (%)]

Category	Subcategory	Subcategory components	*N* (%)
Development of teachers' sustainable development competence 81 (72.3)	Qualification improvement 49 (43.8)	More training and seminars on sustainable education.	32 (28.5)
		Encourage participation in projects.	4 (3.6)
		Certain trainings are needed that would raise teacher competencies.	4 (3.6)
		Teacher self-education.	4 (3.6)
		Teachers and pre-service teachers should organise/participate in various events/discussions about a harmonious/sustainable society.	2 (1.8)
		Raising teacher qualification.	1 (0.9)
		Teachers should be interested in innovation.	1 (0.9)
		To become active through practical methods in working with children.	1 (0.9)
	Organisation of specialised training 17 (15.2)	Specialised courses on sustainable development.	15 (13.4)
		There must be special courses and seminars with practical tasks.	2 (1.8)
	Provision of educational assistance 15 (13.3)	Prepare special recommendations/guidelines for teachers.	8 (7.1)
		Special methodological literature is being developed.	6 (5.3)
		Engage students in learning and content creation	1 (0.9)
Improvement of study process 31 (27.7)	Updating study programmes 17 (15.2)	To integrate principles of sustainable development into all study subjects.	5 (4.4)
		The study programme should include a subject (module) related to natural sciences, environmental protection, ecology and sustainability.	3 (2.7)
		Continuous updating of the educational programme.	3 (2.7)
		To include the topic of sustainable development in study subjects.	2 (1.8)
		Various activities should be integrated into the study programmes.	1 (0.9)
		Include sustainable development topics in study programmes.	1 (0.9)
		There should be a separate subject that would be included in the curricula.	1 (0.9)
		Enrichment of the taught programme with new relevant topics.	1 (0.9)
	Increasing the diversity of study forms and methods 14 (12.5)	To provide more practical knowledge.	6 (5.3)
		Applying seminars and practical classes.	4 (3.6)
		Opportunity to participate in practical activities.	2 (1.8)
		Integrate the topic of sustainability during lectures.	2 (1.8)

Note. Totally 112 semantic units were extracted

personal experience. Generalising the respondents' positions regarding the *promotion of ESD, students' inclusion in this process,* informal stimulating activities and formal stimulating activities are undoubtedly in the lead.

The training of primary school teachers for ESD is considered essential because, namely, in primary classes, children acquire basic knowledge, skills, and values. Teachers should understand sustainable development, include this area in the entire educational process, and constantly develop themselves professionally in this area of knowledge. Two categories were distinguished: *development of teachers' sustainable development competence* and *improvement of the study process*. The results are presented in **Table 7**.

Table 7 shows that the category *development of teachers' sustainable development competence* (72.3%) had an extremely high value when discussing the issues of improving pre-service teachers' training. It consisted of 3 subcategories differing in significance: *qualification improvement* (43.8%), *organisation of specialised training* (15.2%), and *provision of educational assistance* (13.3%). When discussing the forms of qualification improvement, the demand for trainings and seminars on sustainable development dominated. Judging by the issues of the organisation of specialised training, identified according to the second subcategory, pre-service teachers preferred specialised courses on sustainable development. According to pre-service teachers' opinion, educational support included the preparation of special recommendations for teachers and the creation of special methodological literature.

The category *improvement of the study process* (27.7%) consisted of two subcategories: *updating the study programs* (15.2%) and *increasing the diversity of study forms and methods* (12.5%). When discussing the possibilities of updating the study programs, future teachers recommended integrating sustainable development principles into all study subjects, creating a separate module related to natural sciences, environment protection, ecology and sustainability noting that continuous educational program updating must take place. At the same time, while improving the study process, pre-service teachers recommended providing more practical knowledge during seminars and practical classes. Thus, the preparation of future primary school teachers for ESD can and must be improved by developing and improving teachers' sustainable development competencies in various forms and by improving the study process.

DISCUSSION

The research aimed to analyse the position of pre-service preschool and primary education teachers in terms of ESD. It is understood that sustainable development is an integrated approach that includes not only economic or environmental protection issues. First of all, it is an effort to balance economic growth, social welfare, and environmental protection, considering the needs of present and future generations.

Teachers can and must understand sustainable development and integrate this understanding into the educational process in quite a variety of ways. The study showed that future primary school teachers have a sufficiently detailed understanding of sustainable development, and this concept includes key areas such as social, natural, and economic environment. On the other hand, this concept is partly one-sided because the greatest attention is paid to social welfare. Meanwhile, the natural environment component occupies less than a third of the selected category structure. The research conducted in Australia showed that primary school teachers either do not feel constrained/limited by a lack of knowledge or probably do not know what their actual knowledge is on sustainability issues (Effeney & Davis, 2013). Thus, their knowledge is essentially limited regarding ESD (Evans et al., 2012; Goulgouti et al., 2019). Maidou et al. (2019) research showed that most future preschool education teachers had some environmental knowledge, but they did not consider social and economic issues as part of ESD.

The study showed that pre-service teachers mainly emphasise conventional educational approaches when talking about the concept of ESD. Although the importance of ESD is perceived (significant and meaningful), greater emphasis is shifted to the process of ESD. In the latter, the greatest attention is focused on environmental education and the least on practical environmental activities. Similar results were obtained by Aydin and Ural Keles (2021) stating that preschool teachers' awareness about sustainable development is low. A study conducted in the USA showed that students have some theoretical understanding of how to implement ESD, however they indicated that they do not have practical experience (Brandt et al., 2021). Namely practical skills are extremely important working with younger school age children. In Lithuania, formal and non-formal activities in education institutions introduce children to the basics of waste sorting and help them learn to sort waste themselves. In the process, they learn about the habits and harms of wasteful consumption, because the more we consume, the more waste we throw away. They learn how to create various objects, toys, decorations and educational tools from natural materials and recycled materials, thus ensuring the sustainability of materials and giving them a second chance (upcycling). During lessons/activities, they learn about the negative effects of pollution on nature and how to help it by refusing plastic products, disposable containers, etc. Children willingly participate in environmental education and environmental events and projects that take place regularly in schools (Trepulė, 2020).

Similar research also shows that ESD is an important area, but practice-oriented pedagogy is more effective because it provides opportunities to deepen their knowledge, skills, and confidence to teach sustainability at schools (Tomas et al., 2017). The study also revealed that students perceive the role of primary education in shaping a sustainable society as extremely significant. Preschool and primary education is perceived as a favourable period for forming the foundations of sustainable development. The most prominent component of this is the perspective of forming a harmonious society. Considering that the creation of a harmonious society is a long-term process, such an approach can be considered reasonable. Other studies also emphasise that the preschool period is the foundation of sustainable development (Daelmans et al., 2017), what is more, early education has great potential for fostering values, behaviour, and skills that contribute to sustainable development (Croft, 2017; Somerville & Williams, 2015). On the other hand, researchers also state that sustainability education at an early age still remains an under-practised, under-funded, and under-researched field (Davis, 2008). Thus, it is clear that primary school age is a very important period when attitudes, values, and behaviour are formed. By integrating ESD into primary education, children can gain an early understanding of sustainability issues, for example, environmental conservation, social justice, and economic development. This lays the foundations for lifelong sustainable living and responsible decision-making.

The obtained results showed that the majority of future preschool and primary education teachers consider ESD in primary school to be absolutely reasonable. Validity is understood as age appropriateness, usefulness, and the formation of a new generation. Other studies also reveal the validity and importance of

ESD (Miedijensky & Abramovich, 2019). It has been noticed that activities forming sustainable development skills help students strive for sustainability at an early age and develop an understanding and love for nature (Mahat et al., 2016). Pre-service primary teacher preparation for ESD can and must be improved. The conducted research showed that the respondents see the greatest attention and potential in the development of teachers' sustainable development competencies. On the other hand, students pay little attention to improving the study process. Qualification improvement (e.g., seminars, project activities, self-education, etc.) and the organisation of specialised training are considered essential for improving future primary school teachers' preparation for sustainable development. Research shows that such specialised courses/seminars have a positive effect. For example, a study in the USA showed that after the implementation of special courses, students' beliefs about the importance of sustainable development education, attitude towards sustainable development and sustainable consumption practice changed significantly (Merritt et al., 2019). In addition, it is important that issues on ESD are integrated not only into the disciplinary parts of teacher education programmes but also as part of the general education studies of all future teachers (Timm & Barth, 2021).

Research results could be used to create the course content, structure, and access to the studies themselves, to prepare future teachers to implement sustainability education. It is obvious that an effective ESD requires a common approach and position of the whole institution. According to Pace (2016), the attitude of the whole institution implies deeper changes in various decision-making levels, traditional curriculum structures, and the complex nature of the education system. Finally, although the university community seems to recognise the importance of ESD, there are still various misconceptions that need to be removed before action can be taken (Filho, 2010b). It can be reasonably assumed that the conducted study will contribute to the improvement of ESD in general, as well as to the improvement of the training of future primary school teachers in this field as there are still gaps in scientific research related to ESD in teacher training (Raman et al., 2022). There is no doubt that teachers who understand and actively promote sustainable development can make a significant contribution to shaping the younger generation's understanding and commitment to creating a sustainable future.

The study has several limitations. The study was conducted in a specific context, so its results could not be generalised. Only prospective teachers of preschool and primary education participated in the research. The research data were not analysed in terms of possible gender differences due to the homogeneity of the study population. In order to find out whether gender factors influence pre-primary and primary education teachers' attitudes towards sustainable development, a study with a gender-balanced sample could be explored. Other elements are no less important, such as the content of the study programmes, their composition, and finally competent teachers in the field of sustainable development. It is also understood that technology has an important role to play in strengthening ESD in primary school by providing a range of tools and opportunities for effective learning and teaching. And while the role of technology in ESD has not been the focus of this study, it is clear that further research in at least two directions is important. These are the accessibility of information through the use of technology and the use of interactive teaching/learning tools adapted for the primary school.

CONCLUSIONS AND IMPLICATIONS

It has been established that pre-service preschool and primary school teachers have a sufficiently detailed understanding of *sustainable development,* and this concept includes key areas such as social, natural, and economic environment. On the other hand, this concept is partly one-sided since the greatest attention is paid to social welfare. Meanwhile, natural environment component occupies less than a third in the structure of selected categories, and this result could be another incentive to review and update university study programmes, introducing study subjects that would help to shape young people's holistic approach to sustainable development.

It has been found that *ESD* is a significant component of the educational process in primary school. Pre-service teachers basically emphasise usual educational approaches when talking about implementation of ESD. Although the importance of ESD is perceived (significant and meaningful), more emphasis is being shifted to ESD process. In the latter, the greatest attention is focused on environmental education and the least on

environmental activities. It is likely that insufficient attention is paid to the development of environmental practical skills in the training of future teachers, as the results of the survey reflect the subjective position of the research participants, which they form when assessing the quality of their studies and prognostically assessing the ESD situation in primary school.

In the opinion of pre-service teachers, in order for *ESD in primary school* to be successful, it is necessary to foresee ESD implementation strategies, to properly organise the process of formal and informal ESD and to pay great attention to proper future teachers' preparation in this area. It has been revealed that pre-service teachers *perceive the role of primary education in forming a sustainable society* as extremely significant and absolutely justified. The education of preschool and younger school-aged children is perceived as a favourable period, forming the foundations of sustainable development, which must be continuously/constantly carried out in other education stages, purposefully improving children's environmental literacy. Since the formation of sustainable society is a long-term process, such approach should be considered reasonable.

The preparation of pre-service teachers in the field of ESD can and must be improved by developing and improving teachers' sustainable development competencies in various forms and improving the study process. Competence development through various qualification improvement activities (e.g., seminars, project activities, self-study, etc.) and the organisation of specialised trainings are considered essential for improving the training of future primary teachers for sustainable development. The need for improvement/development of the study process is significantly lower, to which the future teachers do not pay the necessary attention and probably participate poorly or do not participate at all in the study process improvement/development activities.

Author contributions: Both authors were involved in concept, design, collection of data, interpretation, writing, and critically revising the article. Both authors approved the final version of the article.

Funding: The authors received no financial support for the research and/or authorship of this article.

Ethics declaration: The authors declared that this study did not require formal ethics approval since the data was completely anonymous, with no personal information collected. Informed consents were obtained from the research participants.

Declaration of interest: The authors declared no competing interest.

Data availability: Data generated or analysed during this study are available from the authors on request.

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