

# Teachers' Knowledge on Education for Sustainable Development – Polish Context

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## Abstract

*The sustainable development model is considered to be the only one implementing the postulate of intra- and intergenerational justice, and allowing modern societies to develop safely. Because education makes it possible to achieve complex social goals, the sustainable development model must be implemented in a modern school. For this purpose, UNESCO experts promote education for sustainable development (ESD) as a response to the challenges of the modern world. The article presents the results of empirical research on teacher knowledge on education for sustainable development. Participants in the research, which was carried out in 2016, were 337 Polish teachers of the lower and upper secondary school. The research analysis showed that Polish teachers are not properly prepared for the implementation of assumptions of education for sustainable development into education programmes - their knowledge in this area is insufficient.*

**Key words:** *education for sustainable development; school; shaping competencies; sustainability; teacher.*

## Introduction

The new 2030 Agenda for Sustainable Development lists 17 goals that are to be met by 2030 (Transforming our world: the 2030 Agenda for Sustainable Development, 2015). Goal number 4 is quality education which is a goal in itself, but also a way to meet other objectives of sustainable future. The pace of change in the contemporary world requires constant acquisition of knowledge and its dissemination, not to mention the need for change in numerous social institutions which are responsible for preparing citizens

for conscious living in their societies (Capelo, Santos, & Pedrosa, 2012; Frisk & Larson, 2011; Kinyanjui, 2014; Szymański, 2014). Therefore, education plays an important role here, but it is also susceptible to various social, economic and political factors, which are impossible to delimit (Ocetekwicz, Tomaszewska, & Mróz, 2017). Education, more specifically, school as an institution, and its teachers play a leading role in the advancement of sustainable development. The term 'education' is an integral part of any programmatic political document on sustainable development, which underlines the significance assigned to education in this context (Bertschy, Künzli, & Lehmann, 2013). Teachers should have a vision and be aware of their roles in educating students towards achieving sustainability. As UNESCO experts say: To create a more sustainable world and to engage with sustainability-related issues as described in the SDGs, individuals must become sustainability change-makers. They require the knowledge, skills, values and attitudes that empower them to contribute to sustainable development. Education, therefore, is crucial for the achievement of sustainable development (UNESCO, 2017).

By enabling learners to live and act in a changing world, Education for Sustainable Development (ESD) increases the quality of teaching and learning. Teachers' knowledge and competencies are crucial for restructuring educational processes and educational institutions towards sustainability. In this context, many authors emphasize the meaning of teachers' competencies in the implementation of ESD principles in all subject curricula, at every stage of education (Cebrian & Junyent, 2015; de Haan, 2007, 2010a, 2010b; Lutvik & Liepina, 2007; Rieckmann, 2010, 2011; Walls, 2012; Wiek, Withycombe, & Redman, 2016). Knowledge is the first, basic, and primary element of these competencies. Knowledge of education for sustainable development principles obliges teachers to: integrate key ESD topics into their curricula; apply mainly problem-solving and activating methods in their teaching, in which knowledge is constructed by learners (not handed out by teacher and passively absorbed by students) (Serafin, Dostál, & Havelka 2015); use media in the teaching process (including the most advanced ones); develop competencies crucial for sustainable development (Corney & Reid, 2007; Good Practices in Teacher Education Institutions, 2007; Künzli & Bertschy, 2012; Mula & Tilbury, 2009; Sleurs, 2008; Teaching and Learning for a Sustainable Future; Walls, 2012).

## **Methodology**

Empirical studies were conducted by means of a diagnostic survey. Such a method is frequently used in the studies through questionnaires, conversation, interview (Babbie, 2013). Considering the study objectives, a questionnaire was the most appropriate data collection technique.

The survey questionnaire consisted of three parts. One of them, the third, was a hidden test of knowledge in the area of education for sustainable development. The test consisted of 20 closed-ended questions. Teachers were to choose one answer out of four possible options (only one answer was correct in each question). Additionally, in the second part of the questionnaire teachers were asked where they search for information about education for sustainable development.

## Research Aim

It was assumed that teachers' knowledge about the principles of education for sustainable development is the key element in the educational process compliant with UNESCO ESD-related postulates. The objective of the study, determined in accordance with the classification of social research goals proposed by Earl Babbie (2013), was explorative. It was an attempt to answer the following questions:

1. What knowledge do teachers possess in the area of education for sustainable development?
2. What are their sources of information about education for sustainable development?

Sources of ESD-related knowledge identified by teachers were correlated with the following variables: the taught subject, years of professional experience, degree of professional promotion, school location, and school level (3rd level — lower secondary; 4th level — upper secondary). Relations were considered statistically relevant, when chi square was  $p < 0.05$ .

## Sample

The survey was conducted among 337 Polish teachers. Table 2 presents statistical-demographic data of the respondents.

Table 1

*Statistical-demographic data of respondents*

gender	female	263	subject taught	Polish language	60	
	male	70		Human and social sciences (civil knowledge, history, knowledge about culture, entrepreneurship)	67	
school location	village	128	school level	Foreign languages	74	
	small town	136		Mathematics	36	
	big city	73		Science and natural sciences (biology, chemistry, physics, geography, education for family life)	86	
years of employment	0-5	36	degree of professional promotion	Information and technical subjects (ICT, technical subject)	9	
	6-10	64		Arts (music, visual arts)	5	
	11-15	85				
	16-20	102				
	21 and more	50				
degree of professional promotion	trainee	14				
	contractual teacher	45				
	appointed teacher	82				
	chartered teacher	196				

## Research Results

### *Results of the Knowledge Test on Education for Sustainable Development*

Test questions were developed based on teacher training materials available at UNESCO and OECD portals, Ministry of Environmental Protection and Ministry of National Education websites, and online publications on education for sustainable development. Test results were grouped according to the following key: very high — 20-18 points; high — 17-14 points; average — 13-11 points; low — 10-7 points; very low — 6 points. None of the respondents got the maximum points. The total sample mean value is 9.61, whereas median and mode values are 10. Twelve teachers obtained very high result; 39 teachers — high; 73 teachers — average; 136 teachers — low; 67 teachers — very low. The mode and median were 10. The correct answers were summed up for each respondent. The results are presented in Table 2.

Table 2  
*Correct answers*

Points	N	%	Points	N	%
0	1	0.30%	11	30	8.90%
1	1	0.30%	12	28	8.31%
2	4	1.19%	13	15	4.45%
3	6	1.78%	14	14	4.15%
4	10	2.97%	15	10	2.97%
5	23	6.82%	16	15	4.45%
6	23	6.82%	17	9	2.67%
7	35	10.39%	18	4	1.19%
8	36	10.68%	19	8	2.38%
9	25	7.42%	20	0	0%
	40	11.87%	TOTAL	337	100%

The statistical analysis of test results implies that the more years of professional experience and, consequently, the higher degree of professional promotion, the greater the knowledge about principles of education for sustainable development. The best results were among teachers of Polish, Foreign languages, and Human and social sciences.

Despite the fact that education for sustainable development is often mistaken with environmental education, what may result from higher awareness among natural sciences teachers in this area (sustainable environmental development is more frequently discussed than the other two areas of sustainable development) — Biology, Geography, Physics and Chemistry teachers received less points than teachers of Polish or Humanities and social sciences.

The vast majority of the respondents think that the education for sustainable development concept is a new initiative developed after 2010 (69.44%). Only slightly more than one fourth of teachers correctly pointed out that this concept was formed at the beginning of 1990s (in 1992, during the UNESCO Summit in Rio de Janeiro,

Agenda 21 — programme document was created, defining education for sustainable development as a priority social activity for harmonious future).

The most difficult task for the teachers was to identify goals of education for sustainable development and the role of the teacher who designs the sustainable didactic process. The respondents answered that the main ESD goal is natural environment protection (almost 41%). Also, many teachers pointed to the assumptions presented in the Delors Report titled *Learning: The Treasure Within* (1996) as the basis for the concept of education for sustainable development (more than 76%). The respondents frequently confused education for sustainable development with environmental — (almost 36% of answers) and global education (about 28.5%).

Teachers associate education for sustainable development mainly with natural environment protection — 51.37% of the respondents think that the priority of ESD is environmental protection and this is what children and teenagers are encouraged to think through different initiatives in and out of school. In addition, 45.4% of teachers think that in ESD process ecology-related issues should be included in subject curricula, also in humanities. None of the respondents selected systems thinking as the key ESD competency, even though it is the main assumption of the harmonious development concept (seeing the world as a complex system of interdependencies).

It is disturbing that almost half of the teachers (45.1%) are sceptical towards media in the process of sustainable education. They see it as tools that have changed human lifestyle and caused unfavourable changes in young people's behaviours. Only one fourth of the respondents (25.22%) answered that properly used media may increase the quality of education and human life.

Little more than 40% (44.22%) of the respondents correctly selected inherent balance, harmony, effective teamwork, co-existence with the environment and using civilization's information resources as the effect of the teaching-learning process, as postulated by UNESCO experts who promote education for sustainable development.

One in five teachers (20.18%) believes respecting natural environment, collaboration of all people towards the local environment and intergenerational collaboration to be the outcomes of education consistent with sustainable development principles.

Only one third of the respondents (31.19%) correctly defined the role of teachers in ESD, as those who show students how their local environment functions and what problems it struggles with. Almost half (48.10%) of the respondents think teachers are responsible for transferring knowledge about the rules of sustainable development. It is worth to point out that knowledge transfer is associated with the transmission model of education, in which the associative mode (instruction) dominates. Therefore, the large number of such answers should be alarming.

Most of the respondents correctly identified key topics of sustainable development that should be included in the curricula of every subject at the 3rd and 4th education level (55.78%).

They also had no difficulties in recognizing that education for sustainable development is connected with science, natural sciences and humanities, and as such should be integrated into all school subjects (76.29% of answers).

### ***Sources of Teacher Knowledge on the Assumptions of Education for Sustainable Development***

Teachers were asked about sources of their knowledge about goals, principles, recommended methods and forms of work within education for sustainable development. They were to select which traditional and modern media they use to acquire new and extend their existing knowledge. They were also asked to indicate how often they use certain media.

The result of the analysis suggests that for teachers, the main sources of knowledge about foundations, goals, methods and forms of work in education for sustainable development are the Internet, books and magazines. In total, 94% of respondents use the Internet to expand their knowledge, out of which 66% do it often. Books are read by 93% of teachers, out of which almost 60% read them often. Additionally, two thirds of the respondents use e-books available online. They are often used as information source by almost 14% of teachers. The respondents relatively often acquire their knowledge from the press and magazines, including specialist journals. In general, press and magazines are read often by 26.45% of the respondents, and specialist journals by 28.2%.

Quite a large number of teachers benefit from trainings in education for sustainable development. Almost 88% identified trainings, workshops and postgraduate studies as their source of knowledge. They participate in them from time to time (41.3%) or occasionally (22.6%). A relatively large percentage of teachers say they acquire knowledge during meetings with experts. Almost 12% meet with them often, whereas 67% rarely. Films and television are also quite popular sources of knowledge. Video materials are used by 82% of the respondents (almost 21% use them often), and television by 81% (often — almost 11%).

Teachers less frequently use other Internet sources like discussion forums or social media; 32% of the respondents never visit forums while researching ESD-related information, slightly more than 32% do it occasionally, and only 8.61% do it often. Almost 38% (37.39%) of the respondents hardly ever use social media (Facebook, Twitter, MySpace, GoldenLine, LinkedIn and other). Less than 9% use these portals to look for information on education for sustainable development. It is worth to notice that today, almost every institution has its account (profile) in one or more social media portals and regularly updates them with most important information. Social media enable exchange of information, and offer a two-way communication (the roles sender-receiver may turn). Teachers can discuss, share information and improve their ideas. Aversion towards social network portals may be caused by the belief that these websites are mainly used for entertainment, posting photos and videos. Despite that, teachers should not give up on this form of acquiring knowledge about ESD, because these portals may offer more information or inspiration than they expect.

Radio is the least popular source of information and knowledge. More than 61.42% of the respondents do not use it to raise their ESD awareness, whereas 7.12% selected radio as the medium they use for this purpose very often.

Table 3

*Sources of knowledge about education for sustainable development used by teachers*

Source of knowledge about education for sustainable development	Never		Very rarely		Sometimes		Very often	
	N	%	N	%	N	%	N	%
Internet	20	5.93%	8	2.37%	87	25.82%	222	65.88%
Press / online magazines	39	11.57%	60	17.80%	149	44.21%	89	26.41%
Television	63	18.69%	119	35.31%	119	35.31%	36	10.68%
Specialist / methodology journals	37	10.98%	59	17.51%	146	43.32%	95	28.19%
Radio	207	61.42%	27	8%	79	23.44%	24	7.12%
Films	59	17.51%	65	19.29%	143	42.43%	70	20.77%
Books, textbooks	22	6.53%	21	6.23%	94	27.89%	200	59.35%
E-books / audiobooks	115	34.12%	97	28.78%	79	23.44%	46	13.65%
Discussion forums	115	34.12%	109	32.34%	84	24.93%	29	8.61%
Community portals	126	37.39%	112	33.23%	70	20.77%	29	8.61%
Meetings with experts	73	21.66%	95	28.19%	130	38.58%	39	11.57%
Trainings, workshops, postgraduate studies	42	12.46%	76	22.55%	139	41.25%	80	23.74%

The analysis of the research results allowed determining which variables affect selection of certain media as sources of teachers' knowledge about education for sustainable development. The press and online magazines are often chosen by teachers in lower secondary schools and the relationship between the choice of this medium and "school level" variable is statistically relevant. This relationship is shown in Table 4. There is also a relationship between school location and the use of press to increase knowledge about ESD by teachers. Teachers working in small towns use this medium the most often, followed by teachers in big cities, and less frequently by teachers in village schools.

Table 4

*Press and online magazines as sources of knowledge and school level*

	School level					
	Lower secondary school		Upper secondary school		In all	
	N	%	N	%	N	%
Never	10	5.65%	27	18.12%	37	11.35%
Very rarely	42	23.73%	15	10.07%	57	17.48%
Sometimes	86	48.59%	60	40.27%	146	44.79%
Very often	39	22.03%	47	31.54%	86	26.38%
In all	177	100.00%	149	100.00%	326	100.00%

(Pearson Chi square=23.74, Vc=0.270; df=3; p&lt;0.000)

The level of school in which teachers work is also relevant for choosing specialist (including teaching methodology) journals as the source of knowledge about the areas of sustainable development, education in particular. Unlike general press, magazines addressed to educators are most often read by teachers in high schools. This choice is also influenced by years of professional experience — teachers working more than 20 years read specialized magazines most often, then those working 16-19 years, then the beginners (0-5 years of employment), and teachers with 10-15 years of professional experience.

The subject taught seems to matter when it comes to choosing films as the source of knowledge about sustainable development and education oriented towards sustainable development of individuals and the world. The analysis of the results indicates that video materials are the source of knowledge about sustainable development for teachers of Foreign languages and Natural sciences and Science. This may be due to the fact that they have easier access to this type of materials than other educators. The correlation is presented in Table 5.

Table 5

*Subject taught and using films to expand knowledge about education for sustainable development*

	Subject taught					
	Polish language	Human and social sciences	Foreign languages	Mathematics	Science and natural sciences	In all
	%	%	%	%	%	%
Never	13.33%	13.43%	22.97%	33.33%	13.95%	17.96%
Very rarely	23.33%	26.87%	14.86%	30.56%	11.63%	19.81%
Sometimes	45.00%	40.30%	36.49%	27.78%	52.33%	42.11%
Very often	18.33%	19.40%	25.68%	8.33%	22.09%	20.12%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

(Pearson Chi square=24.51, Vc=0.159; df=12; p<0.05)

Selecting films as the source of knowledge about sustainable development depends also on the degree of professional promotion. There are five stages of teacher promotion in Poland: after university graduation the teacher becomes a “Trainee” who teaches for one or two years. The next level, after working at school for a few years, the teacher can become a “Contractual teacher”. After passing an examination, he/she can obtain the status of “Nominated teacher”. The fourth level, “Certified teacher” is where most careers end. Some, however, manage to reach the fifth level, which is honorary, “Professor of education”. This relationship is presented in Table 6.



Table 6  
Films as a source of knowledge about ESD and degree of professional promotion

	Degree of professional promotion				
	Trainee	Contractual teacher	Nominated teacher	Certified teacher	Total
	%	%	%	%	%
Never	15.38%	26.67%	12.20%	17.35%	17.26%
Occasionally	30.77%	13.33%	28.05%	16.33%	19.35%
Sometimes	30.77%	26.67%	39.02%	48.47%	42.56%
Very often	23.08%	33.33%	20.73%	17.86%	20.83%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

(Pearson Chi square=18.58, Vc=0.136; df=9; p<0.05)

The choice of traditional, printed books and textbooks as means to expand knowledge about sustainable development depends on two variables: school level and location. The correlations are shown in Tables 7 and 8.

Table 7  
Books as a source of knowledge about ESD and school level

	Type of school					
	Gymnasium <sup>1</sup>		High school <sup>2</sup>		Total	
	N	%	N	%	N	%
Never	4	2.26%	16	10.74%	20	6.13%
Occasionally	12	6.78%	9	6.04%	21	6.44%
Sometimes	59	33.33%	30	20.13%	89	27.30%
Really often	102	57.63%	94	63.09%	196	60.12%
Total	177	100.00%	149	100.00%	326	100.00%

(Pearson Chi square=15.11, Vc=0.215; df=3; p<0.002)

Table 8  
Books as a source of knowledge about ESD and school location

	Place of work							
	Village		Town		Big city		Total	
	N	%	N	%	N	%	N	%
Never	2	1.56%	15	11.03%	5	7.35%	22	6.63%
Occasionally	8	6.25%	9	6.62%	3	4.41%	20	6.02%
Sometimes	40	31.25%	29	21.32%	23	33.82%	92	27.71%
Really often	78	60.94%	83	61.03%	37	54.41%	198	59.64%
Total	128	100.00%	136	100.00%	68	100.00%	332	100.00%

(Pearson Chi square=13.26, Vc=0.141; df=6; p<0.05)

<sup>1</sup> Gymnasium – Lower secondary school

<sup>2</sup> High school – Upper secondary school

As indicated by the analysed data, more than 60% of teachers working in upper secondary schools use books and textbooks often to increase their ESD-related knowledge. The number of teachers working with lower secondary students and using printed books and textbooks is very often similar to the number of upper secondary teachers, but, in lower secondary schools, there are hardly any teachers who never use books as their source of knowledge about sustainable development.

As for school location, the analysis revealed that almost all teachers working in rural areas declare they use books and textbooks to gain new information about ESD. In all three groups, the number of teachers declaring they often use this traditional medium amounts almost up to 60%. However, more than 10% of teachers working in small towns and 8% of those working in big cities do not use books or textbooks at all.

The respondents were also asked about using modern publication forms, namely e-books, available online free of charge or for a small fee. There is a statistically relevant correlation between using this medium and: school type and location, as well as years of professional experience. It should be emphasized that e-books are one of the most available, most valuable and most reliable sources of ESD-related information, as well as knowledge about goals, methods, forms of work and topics covered by education for sustainable development. This results from experts' postulate to make materials about sustainable development widely distributed in an open access mode.

The biggest group of teachers who do not use e-books to increase their knowledge about ESD are those with 16-19 years of employment. What is interesting, there are more teachers who work the longest (more than 20 years) and often use e-books than teachers working 11-15 years and the youngest teachers with 0-5 years of experience. Teachers who rarely resort to electronic publications in order to enrich their knowledge on sustainable development are in the group of respondents with the shortest history of employment.

Considering the school level, data indicate that lower secondary teachers use e-books more often. Almost 20% of them do it often, whereas only 8% of high school teachers read e-books often. Slightly more than 40% of teachers working with students at the 4th level of education, never use e-books (27.12% in lower secondary group). Using e-books depends also on school location. Teachers in villages support themselves with this modern medium much more often perhaps because they have less access to traditional literature or opportunity to attend trainings or workshops than teachers in big cities. Over 45% of teachers in big cities never use e-books (small towns = 37.5%, villages = 23.44%) and only 5.88% do it often (small towns = 10.29%, villages = 21.88%).

Today, thanks to the development of the Internet and contact networks, teachers can consult and share their ideas, opinions or knowledge in discussion forums. The research revealed that the choice of this medium varies, and depends on school level and location.

Data presented in Table 9 allow to pose a thesis that lower secondary teachers use online forums more often, but this is not a popular way of gaining knowledge about education for sustainable development; 45% of high school teachers never look for

solutions by consulting other professionals, whereas only 6% do it often. Almost 25% of teachers in lower secondary schools never seek ESD-related information in forums. Little more than 10% of the respondents often use this form of learning and sharing experiences.

Table 9

*Participation in online forums and school level*

	Type of school					
	Gymnasium		High school		Total	
	N	%	N	%	N	%
Never	43	24.29%	68	45.64%	111	34.05%
Occasionally	64	36.16%	42	28.19%	106	32.52%
Sometimes	52	29.38%	29	19.46%	81	24.85%
Very often	18	10.17%	10	6.71%	28	8.59%
Total	177	100.00%	149	100.00%	326	100.00%

(Pearson Chi square=16.73, Vc=0.227; df=3; p<0.001)

Another variable influencing the way educators use Internet forums is school location. Teachers working in rural areas use forums much more often, whereas those working in small towns use them the least frequently. Similarly, the largest group of respondents who indicated frequent use of forums to increase their knowledge about sustainable development, are employed in villages (12.5%). Only 6.62% of teachers working in small towns and 5.88% of those employed in urban schools often use online forums.

Teachers of different subjects use another modern medium offered by the online environment — community portals — in a different way and with different frequency. Associated mainly with entertainment, social media may be the source of invaluable and reliable information on sustainable development and education designed according to its principles. The research shows statistically relevant dependence between the taught subjects and the use of community portals. The correlation is presented in Table 10.

Table 10

*The use of community portals and taught subject*

	Subject					
	Polish language	Humanities and social sciences	Foreign language	Maths	Natural sciences	Total
	%	%	%	%	%	%
Never	45.00%	19.40%	37.84%	41.67%	45.35%	37.77%
Occasionally	33.33%	31.34%	32.43%	41.67%	34.88%	34.06%
Sometimes	15.00%	37.31%	18.92%	11.11%	15.12%	20.12%
Very often	6.67%	11.94%	10.81%	5.56%	4.65%	8.05%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

(Pearson Chi square=25.92, Vc=0.164; df=3; p<0.01)

Teachers of Science and Natural sciences use forums the least frequently (45% — never, 5% — often), whereas Polish and Humanities educators — the most willingly. Over 15% of teachers of Foreign languages often participate in forums.

Using community portals depends also on school location. Teachers in village schools use portals much more often: 10% — often, 27.34% — sometimes. More than 40% of the respondents working in small towns and almost 50% employed in big cities never use online portals.

The research revealed that there is a statistically relevant dependence between years of experience and choosing meetings with experts as the source of knowledge about ESD.

Meetings with experts are the most helpful for teachers with the shortest employment history. This form of increasing knowledge about ESD is least frequently selected by teachers with the greatest professional experience (16-19 years and 20 and more years). Popularity of meetings with experts in the group of respondents with the least professional experience (20% attend often and more than 50% — sometimes) may be connected with formal requirements teachers must meet in order to be promoted. Teachers who want to obtain a higher degree of professional promotion must provide certain certificates proving they have participated in different forms of training and enrichment. Thus, this form of acquiring and expanding knowledge may be more attractive for young educators than for teachers who have been employed for a dozen or more years.

Use of other media, both traditional and modern, to obtain and increase ESD-related knowledge does not depend on the variables identified in the research (no statistical relevance). While summarizing the research results, several aspects are worth giving attention to.

Teachers working longer possess more knowledge about ESD perhaps due to the fact that, being teachers for many years, they constantly search for new solutions, are interested in new trends or concepts in education. Teachers who already have professional experience do not have to spend as much time on teaching and content-related preparation as the beginners. As education for sustainable development is promoted by UNESCO, it surely raises big interest among experienced educators. UNESCO is the UN unit teachers know, recognize and trust.

It is disturbing that teachers identify ESD with environmental education. Three areas of sustainable development (apart from environmental, also social and economic) have been emphasized for years in ESD-related media, trainings and publications. Despite this, many teachers think education for sustainable development is mainly connected with environmental protection. They also confuse ESD principles with the principles of UNESCO reports developed in 1990s (e.g. Jacques Delors' *Education: the Treasure Hidden Within*). This proves that ESD principles have been promoted insufficiently among teachers and education-related social and professional groups.

It is noticeable that few teachers are properly able to describe the role of teachers in education for sustainable development. Moreover, the respondents prefer the instruction-based teaching model in which teachers are more active than students. Besides, teachers do not recognize education in systems thinking as one of the main ESD postulates.

It is also disturbing that teachers underestimate the importance of media in the development of young people and societies. Most likely, their attitude towards media as

education tools is negative, resulting from insufficient knowledge and poor literacy in this area. Many teachers do not know how to use the potential of media in the teaching-learning process.

However, it is encouraging that teachers properly identify learning outcomes in ESD, namely: harmonious personal development, inner balance and effective collaboration. They are also aware of the topics that should be covered within education for sustainable development. Therefore, it is surprising that they mistake ESD with environmental education.

Teachers prefer the Internet, books and meetings with experts/trainings as means to improve and enrich their knowledge within ESD, and at the same time they do not recognize the potential of new media despite their attractiveness (podcasts, e-books/audiobooks, online forums, community portals...).

The analysis of the research results in this area indicates that there is a strong need for further education and trainings regarding knowledge about education for sustainable development, as well as sources and methods of obtaining thereof. Effective use of media and greater knowledge about ESD among teachers will contribute not only to better quality of education, but primarily, to the harmonious development of students and sustainable development of societies.

## **Results and Conclusion**

It seems that sustainability in terms of human survival and progress is an inherent societal characteristic that appears to have been a part of human behaviour from the beginning of time, so for teachers working in the school of modern society (Giddens, 2009) it should be clear that they have to support harmonious development of the students and care for sustainable development in three dimensions: environmental, economic, and social. This means they should have knowledge about sustainable development and assumptions of education dedicated to sustainable development.

According to the research analysis, teachers do not possess sufficient knowledge of education for sustainable development. The highest results in the test regarding postulates, goals, and teachers' role in ESD were obtained by teachers of: Polish, Foreign languages, and Humanities and social sciences. This means that despite ESD being associated mainly with environmental protection and activities towards improving the condition of our planet, it is Humanities and social sciences teachers who are more interested in sustainable development postulates than biologists, geographers, mathematicians and chemists. Even more, they know what the teachers' tasks are within a sustainable didactic process, they are aware of principles behind the European concept of education for harmonious development, and they can identify preferable teaching methods. Teachers of Natural sciences and Science ignore ESD principles — probably because they wrongly limit education for sustainable development to selected aspects of environmental education. Besides, teachers who work longer have more knowledge in the area of educating for sustainable development and supporting students in their harmonious growth. This may be due to the fact that,

having settled in their profession, they are committed to maintain high quality of their work, and this, in turn, may be connected with the attitude of responsibility towards UNESCO postulates in education. It is worth to point out that 17 goals of sustainable development until 2030 (primarily goal 4 — ensure quality education and promote lifelong learning opportunities for all children, youth and adults) are promoted and widely discussed in media and pedagogical discourse. Teachers, who are committed to perform their work professionally and maximize their efforts towards ensuring harmonious development of their students, surely must know ESD postulates, to a greater or lesser extent. According to the research, many teachers, most often with years of experience and, consequently, higher degree of professional promotion, implement at least some ESD principles in their daily work. Unfortunately, there is also a large group of educators who confuse ESD principles with other UNESCO reports, such as *Education: the Treasure Hidden Within*. This means that Delors' report was much more successfully promoted among teachers than the modern paradigm of education aiming at the harmonious development of students.

The research implies that language (native and foreign) and Humanities and social sciences teachers possess greater knowledge about sustainable development and, consequently, they focus more on key ESD issues, use more diverse didactic methods to shape key competencies, try to enrich their teaching with different didactic forms, for example trips or field classes. Thus, they facilitate harmonious growth of their students better than teachers of Science, Natural sciences, Mathematics or Technical subjects. As such, it is inscribed in the specifics of their subjects (humanistic means resulting from belief that humans are the highest value, so caring about complex development should be always important for them). The best results in this area were achieved by teachers settled in their career, with the degree of appointed teacher, who aspire to obtain the highest degree of professional promotion, as well as pedagogues who are already chartered teachers. Less experienced educators probably spend more time preparing for their classes, therefore their knowledge regarding ESD is lower and they use less diverse didactic methods.

The main sources of knowledge about principles and goals of education for sustainable development, and implementation methods, are materials published in websites and books. Modern media, such as networking portals, e-books, podcasts or online forums, are not popular among teachers searching for information and knowledge on sustainable development. Therefore, it would be worth to convince them that online multimedia resources are valuable support in designing sustainable education process. New media ensure the two-way communication: sender-receiver-sender. This provides greater value in such a way of gaining information and expertise, and allows for the evaluation and discussion of the value of information.

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## References

- Babbie, E. (2013). *The practice of social research*. Belmont: Wadsworth Cengage Learning.
- Bertschy, F., Künzli, Ch., & Lehmann, M. (2013). Teachers' Competencies for the Implementation of Educational Offers in the Field of Education for Sustainable Development. *Sustainability*, 5, 5067-5080. <https://doi.org/10.3390/su5125067>
- Capelo, A., Santos, M. C., & Pedrosa, M. A. (2012). Education for Sustainable Development Indicators, Competencies and Science Education. In F. J. Gonçalves, R. Pereira, & W. L. Filho (Eds.), *Contributions to the UN Decade of Education for Sustainable Development* (pp. 96-115). Frankfurt am Main: Peter Lang.
- Cebrian, G., & Junyent, M. (2015). Competencies in Education for Sustainable Development: Exploring the Student Teachers' Views. *Sustainability*, 7, 2768-2786. <https://doi.org/10.3390/su7032768>
- Corney, G., & Reid, A. (2007). Student teachers' learning about subject matter and pedagogy in education for sustainable development. *Environmental Education Research*, 13, 33-54. <https://doi.org/10.1080/13504620601122632>
- De Haan, G. (2007). The BLK 21' programme in Germany: a Gestaltungskompetenz-based model for education for sustainable development. *Environmental Education Research* 12(1), 19-32. <https://doi.org/10.1080/13504620500526362>
- De Haan, G. (2010a). *Guide: Education for Sustainable Development at Secondary Level. Justifications, Competencies, Learning Opportunities. Compiled by the Transfer-21 Programme's 'Quality and Competencies' working group*. Berlin: Transfer-21 Programme Koordinierungstelle.
- De Haan, G. (2010b). The Development of ESD-Related Competencies in Supportive Institutional Frameworks. *International Review of Education*, 56(2-3), 315-329. <https://doi.org/10.1007/s11159-010-9157-9>
- Delors, J. (1996). *Learning: The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty-first Century*. Paris: UNESCO Publishing.
- Frisk, E., & Larson, K. L. (2011). Educating for Sustainability: Competencies & Practices for Transformative Action. *Journal of Sustainability Education*, 2, 1-20.
- Giddens, A. (2009). *Modernity and self-identity: self and society in the late modern age*. Cambridge: Polity Press.
- Jutvik, G., & Liepina, I. (2007). *Education for change. A handbook for teaching and learning sustainable development*. Riga: Gandrs.
- Künzli, D. Ch., & Bertschy, F. (2012). Education for Sustainable Development: Conceptual Foundations, Pedagogical Structure and Practical Implementation. In U. Stoltenberg, & V. Holz (Eds.), *Education for Sustainable Development – European Approaches* (pp. 33-35). Bad Homburg: VHS.
- Kinyanjui, N. M. (2014). *Education for Sustainable Development: Training ESD Conscious Teacher*. Saarbrücken: LAP LAMBERT Academic Publishing.
- Mula, I., & Tilbury, D. (2009). A United Nations Decade of Education for Sustainable Development (2005-14). What Difference Will It Make? *Journal of Education for Sustainable Development*, 3(1), 87-97. <https://doi.org/10.1177/097340820900300116>

- Ocetkiewicz, I., Tomaszewska, B., & Mróz A. (2017). Renewable Energy in Education for Sustainable Development. The Polish experience. *Renewable and Sustainable Energy Reviews*, 80, 92-97. <https://doi.org/10.1016/j.rser.2017.05.144>
- Rieckmann, M. (2010). Future-oriented higher education: Which key competencies should be fostered through university teaching and learning? *Futures*, 44(2), 127-135. <https://doi.org/10.1016/j.futures.2011.09.005>
- Rieckmann, M. (2011). Key Competencies for a Sustainable Development of the World Society. Results of a Delphi Study in Europe and Latin America. *GAIA*, 20(1), 48-56. <https://doi.org/10.14512/gaia.20.1.10>
- Serafin, Č., Dostál, J., & Havelka, M. (2015). Inquiry-Based Instruction in the Context of Constructivism. *Procedia - Social and Behavioral Sciences*, 186, 592 – 599. <https://doi.org/10.1016/j.sbspro.2015.04.050>
- Sleurs, W. (Ed.) (2008). *Competencies for ESD (Education for Sustainable Development) teachers. A framework to integrate ESD in the curriculum of teacher training institute*. Brussels: Comenius 2.1. Programme.
- Szymański, M. (2014). *Edukacyjne problemy współczesności [Education problems of contemporary society]*. Kraków: IMPULS.
- Transforming our World: The 2030 Agenda for Sustainable Development* (2015). Paris: United Nations.
- UNESCO (2017). *Education for Sustainable Development. Learning Objectives*. Paris: UNESCO.
- Wals, A. E. J. (2017). *Shaping the Education of Tomorrow. 2012 Report on the UN Decade of Education for Sustainable Development*. Paris: UNESCO.
- Wiek, A., Withycombe, L., & Redman, Ch. L. (2016). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science*, 6(2), 203–218. <https://doi.org/10.1007/s11625-011-0132-6>

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# Znanje nastavnika o obrazovanju za održivi razvoj – slučaj Poljske

## Sažetak

*Smatra se da je model održivoga razvoja jedini model koji primjenjuje postulat unutar i međugeneracijske pravednosti te omogućuje siguran razvoj suvremenoga društva. S obzirom na to da obrazovanje omogućuje stjecanje složenih društvenih ciljeva, model održivoga razvoja mora biti primijenjen i u suvremenim školama. S tom svrhom stručnjaci UNESCO-a promoviraju obrazovanje za održivi razvoj (OOR) kao odgovor na izazove suvremenoga svijeta. Rad donosi rezultate empirijskoga istraživanja o znanju nastavnika o obrazovanju za održivi razvoj. U istraživanju koje je provedeno 2016. sudjelovalo je 337 nastavnika nižih i viših razreda srednje škole. Analiza rezultata pokazala je da su poljski nastavnici nedovoljno pripremljeni za provedbu teza iz područja obrazovanja za održivi razvoj u obrazovne programe – njihovo znanje iz spomenutoga područja je nedostatno.*

**Ključne riječi:** nastavnik; oblikovanje kompetencija; obrazovanje za održivi razvoj; održivost; škola.

## Uvod

Novi Program za održivi razvoj 2030. navodi 17 ciljeva koji bi se trebali ostvariti do 2030. (Transforming our world: the 2030 Agenda for Sustainable Development, 2015). Cilj broj 4 je kvalitetno obrazovanje, što je cilj sam po sebi, ali isto tako predstavlja način na koji se mogu dostići i drugi ciljevi karakteristični za održivu budućnost. Brzina promjene u suvremenome društvu nalaže stalno usvajanje znanja i njegovu diseminaciju, da ne spominjemo potrebu za promjenom u brojnim društvenim institucijama koje su odgovorne za pripremanje građana za osviješteni život u društvenoj zajednici (Capelo, Santos, i Pedrosa, 2012; Frisk i Larson, 2011; Kinyanjui, 2014; Szymański, 2014). Zbog toga obrazovanje ima vrlo važnu ulogu, ali je ono isto tako podložno različitim društvenim, ekonomskim i političkim čimbenicima koje je nemoguće ograničiti (Ocetkiewicz, Tomaszewska, i Mróz, 2017). Obrazovanje, točnije škola kao institucija i njezini nastavnici imaju vodeću ulogu u promicanju održivoga razvoja. Pojam „obrazovanje“ sastavni je dio svih programskih političkih dokumenata o održivu razvoju koji naglašavaju važnost dodijeljenju obrazovanju u ovome kontekstu (Bertschy, Künzli, i Lehmann, 2013). Nastavnici bi trebali imati viziju i biti osviješteni o svojim ulogama u obrazovanju učenika usmjerenome na održivosti. Kako navode stručnjaci UNESCO-a: Da bismo stvorili održivi svijet i da bismo sudjelovali u predmetima

vezanima uz održivost kako su opisani u ciljevima za održivi razvoj, pojedinci moraju postati pokretači promjene za održivost. Njima su potrebni znanje, vještine, vrijednosti i stavovi koji ih osnažuju u doprinosima za održivi razvoj. Stoga je obrazovanje ključno kod ostvarenja održivoga razvoja (UNESCO, 2017).

Osposobljavanjem učenika za život i rad u promjenjivu svijetu, obrazovanje za održivi razvoj (ESD) povećava kvalitetu poučavanja i učenja. Znanja i kompetencije nastavnika presudni su u restrukturiranju obrazovnih procesa i obrazovnih institucija koje teže održivosti. U tom kontekstu mnogi autori naglašavaju značenje nastavničkih kompetencija u primjeni OOR principa u svim predmetnim kurikulumima na svakoj razini obrazovanja (Cebrian i Junyent, 2015; de Haan, 2007, 2010a, 2010b; Lutvik i Liepina, 2007; Rieckmann, 2010, 2011; Wiek, Withycombe, i Redman, 2016; Walls, 2012). Znanje je prvi, osnovni i početni element tih kompetencija. Poznavanje principa obrazovanja za održivi razvoj podrazumijeva da će nastavnici integrirati ključne OOR teme u svoje kurikule, da u svojoj nastavi primjenjuju metode rješavanja problema i aktivnoga sudjelovanja u kojem učenici konstruiraju znanje (za razliku od nastave u kojoj nastavnik prenosi znanje, a učenici ga pasivno usvajaju) (Serafín, Dostál, i Havelka, 2015), da se u nastavnome procesu koriste medijima (uključujući napredne medije), te da će razviti kompetencije potrebne za održivi razvoj (Corney i Reid, 2007; Good Practices in Teacher Education Institutions, 2007; Künzli i Bertschy, 2012; Mula i Tilbury, 2009; Sleurs, 2008; Teaching and learning for a Sustainable Future; Walls, 2012).

## Metodologija

Empirijska istraživanja provedena su koristeći se dijagnostičkom anketom. Takva metoda često se koristi u istraživanjima, a provodi se putem upitnika, razgovora, intervjuja (Babbie, 2013). S obzirom na ciljeve istraživanja najpogodniji instrument za dobivanje podataka bio je upitnik.

Upitnik se sastojao od tri dijela. Jedan od dijelova (treći dio) bio je skriveni test znanja iz područja obrazovanja za održivi razvoj. Test se sastojao od 20 pitanja zatvorenoga tipa. Nastavnici su morali odabrati jedan od četiri ponuđena odgovora (samo je jedan odgovor u svakome pitanju bio točan). Nadalje, u drugom dijelu upitnika, nastavnici su morali napisati na koji način dolaze do informacija o obrazovanju za održivi razvoj.

## Cilj istraživanja

U istraživanju se krenulo od pretpostavke da je nastavnikovo znanje o principima obrazovanja za održivi razvoj ključan element u obrazovnom procesu, što je u skladu s postulatima UNESCO-a za OOR. Svrha istraživanja, koja je usklađena s klasifikacijom ciljeva u društvenim istraživanjima (vidi Babbie, 2013), bila je otkriće. Nastojalo se pronaći odgovore na sljedeća pitanja:

1. Koja znanja vezana uz obrazovanje za održivi razvoj posjeduju nastavnici?
  2. Kojim se izvorima koriste za dobivanje informacija o obrazovanju za održivi razvoj?
- Izvori vezani uz OOR koje su nastavnici naveli povezani su sa sljedećim varijablama:

predmet poučavanja, godine radnoga iskustva, razina profesionalnog napredovanja, lokacija, razina škole (3. razina – niži razredi srednje škole; 4. razina – viša razina srednje škole). Povezanost je bila statistički značajna kada je Chi-kvadrat  $p < 0,05$ .

## **Uzorak**

Istraživanje je provedeno na uzorku od 337 poljskih nastavnika. Tablica 2 prikazuje demografske podatke o ispitanicima.

Tablica 1

## **Rezultati**

### **Rezultati testa znanja o obrazovanju za održivi razvoj**

Ispitna pitanja razvijena uz pomoć materijala za obrazovanje nastavnika koji su dostupni na portalima UNESCO-a i OECD-a, mrežnim stranicama Ministarstva zaštite okoliša i Ministarstva nacionalnog obrazovanja i elektroničkih publikacija vezanih uz obrazovanje za održivi razvoj. Rezultati testa grupirani su prema sljedećem ključu: vrlo visoki — 20-18 bodova; visoki — 17-14 bodova; prosječni — 13-11 bodova; niski — 10-7 bodova; vrlo niski — 6 bodova. Nitko od ispitanika nije ostvario maksimalan broj bodova. Ukupna srednja vrijednost uzorka je 9,61, a vrijednosti medijana i moda su 10. Dvanaest nastavnika ostvarilo je vrlo visok rezultat; 39 nastavnika visok; 73 nastavnika prosječan; 136 nastavnika nizak; 67 nastavnika vrlo nizak rezultat. Medijan i mod bili su 10. Točni odgovori zbrojeni su za svakog ispitanika, a rezultati su prikazani u tablici 2.

Tablica 2

Statistička analiza rezultata testa pokazuje da su godine radnoga iskustva i viši stupanj napredovanja u profesiji razmjerni znanju o principima obrazovanja za održivi razvoj. Najbolje rezultate ostvarili su nastavnici Poljskog jezika, Stranog jezika, Humanističkih i društvenih predmeta.

Unatoč činjenici da se obrazovanje za održivi razvoj često pogrešno poistovjećuje s obrazovanjem za okoliš, što je učestalo kod nastavnika prirodnih znanosti (održivi razvoj za okoliš češće je predmet rasprave od ostala dva područja održiva razvoja), nastavnici Biologije, Geografije, Fizike i Kemije ostvarili su manji broj bodova od nastavnika Poljskog jezika ili nastavnika Humanističkih i društvenih znanosti.

Većina ispitanika smatra da je koncept obrazovanja za održivi razvoj novija inicijativa razvijena nakon 2010. (69,44 %). Malo više od četvrtine nastavnika u ovome je istraživanju točno odgovorilo da je taj koncept razvijen početkom 1990-ih (1992. za vrijeme UNESCO Sumita u Rio de Janeiru razvijen je programski dokument *Agenda 21* koji definira obrazovanje za održivi razvoj kao prioritetnu društvenu aktivnost za skladnu budućnost).

Najteži zadatak za nastavnike bio je identificirati ciljeve obrazovanja za održivi razvoj i ulogu koju ima nastavnik koji kreira nastavu za održivi razvoj. Ispitanici su odgovorili

da je glavni cilj OOR zaštita prirode i okoliša (gotovo 41 %). Nadalje, puno nastavnika ukazalo je na teze predstavljene u izvješću *Delors' Report Learning: The Treasure Within* (1996) kao osnove koncepta obrazovanja za održivi razvoj (više od 76 %). Ispitanici su često poistovjećivali obrazovanje za održivi razvoj s obrazovanjem za prirodu i okoliš (gotovo 36 % odgovora) i globalnog obrazovanja (oko 28,5 %).

Nastavnici povezuju obrazovanje za održivi razvoj uglavnom sa zaštitom prirode i okoliša. U ovome istraživanju 51,37 % ispitanika smatra da je prioritet OOR zaštita okoliša na kakvo se razmišljanje potiču i djeca i tinejdžeri putem različitih inicijativa unutar i izvan škole. 45,4 % nastavnika smatra da bi u procesu OOR teme vezane uz ekologiju trebale biti uključene u predmetni kurikulum pa i u humanističke znanosti. Nitko od ispitanika nije odabrao sustavno mišljenje, iako je to osnovna pretpostavka koncepta skladnog razvoja (vidjeti svijet kao složeni sustav međuovisnosti).

Zabrinjavajuće je da je gotovo polovina ispitanika (45,1 %) skeptična prema medijima u obrazovanju za održivi razvoj. Medije vide kao alate koji su promijenili životni stil i uzrokovali nepovoljne promjene u ponašanju mladih. Samo četvrtina ispitanika (25,22 %) odgovorila je da pravilna upotreba medija može povećati kvalitetu obrazovanja i ljudskoga života.

Malo više od 40 % (44,22 %) ispitanika točno je odabralo unutarnju ravnotežu, sklad, učinkovit timski rad, koegzistenciju s okolišem i upotrebu civilizacijskih izvora informacija kao učinak procesa učenja i poučavanja, što je polazište UNESCO-vih stručnjaka koji promoviraju obrazovanje za održivi razvoj.

Svaki peti nastavnik (20,18 %) smatra da su poštivanje prirodnoga okoliša, suradnja sa svima u lokalnom okruženju i međugeneracijska suradnja ishodi obrazovanja usklađeni s principima održivoga razvoja.

Samo jedna trećina ispitanika (31,19 %) točno je definirala ulogu nastavnika OOR, kao onoga koji pokazuje učenicima kako djeluje njihova lokalna zajednica i s kojim se problemima suočava. Gotovo polovina (48,10 %) ispitanika smatra da su učitelji odgovorni za prenošenje znanja o pravilima za održivi razvoj. Vrijedno je istaknuti da je prijenos znanja povezan s transmisivskim modelom obrazovanja u kojem dominira asocijativno poučavanje. Stoga je alarmantno velik broj takvih odgovora.

Većina ispitanika točno je identificirala ključne teme vezane uz održivi razvoj koje bi trebale biti uvrštene u kurikulum svakoga predmeta na 3. i 4. razini obrazovanja (55,7 %).

Ispitanici također nisu imali poteškoća s prepoznavanjem činjenice da je obrazovanje za održivi razvoj povezano sa znanosti, prirodnim znanostima i humanističkim znanostima i da kao takvo treba biti integrirano u sve školske predmete (76,29 % odgovora).

### ***Izvori znanja nastavnika o pretpostavkama obrazovanja za održivi razvoj***

Nastavnike smo pitali o izvorima kojima se koriste kako bi obogatili svoje znanje o ciljevima, principima, preporučenim metodama i načinima rada vezanima uz obrazovanje za održivi razvoj. Nastavnici su birali između tradicionalnih i modernih

medija kojima se koriste kako bi stekli novo ili produbili postojeće znanje. Nastavnici su također označili i učestalost korištenja određenih medija.

Rezultati analize navode da je nastavnicima glavni izvor znanja o osnovama, ciljevima, metodama i načinima rada u obrazovanju za održivi razvoj internet, zatim knjige i časopisi. Ukupno 94 % ispitanika služi se internetom za proširivanje znanja, od kojih 66 % to čini često. Knjige čita 93 % nastavnika od kojih to često čini 60 %. Nadalje, dvije trećine ispitanika koristi se e-knjigom sa svrhom dobivanja informacija. Knjigama se često koristi gotovo 14 % ispitanika. Ispitanici često stječu znanje iz tiska i časopisa, uključujući stručne časopise. Općenito, tisak i časopise često čita 26,45 % ispitanika, a stručne časopise njih 28,2 %.

Prilično velik broj nastavnika profitira od obuke iz područja obrazovanja za održivi razvoj. Gotovo 88 % ispitanika navelo je osposobljavanje, radionice i poslijediplomske programe kao izvor svoga znanja. U njima sudjeluju s vremena na vrijeme (41,3 %) ili povremeno (22,6 %). Razmjerno velik postotak nastavnika tvrdi da su svoje znanje stekli za vrijeme sastanaka sa stručnjacima. Njih gotovo 12 % često se sastaje s njima, a njih 67 % to čini rijetko. Filmovi i televizija također su popularni izvori znanja. Videomaterijalima se koristi 82 % ispitanika (21 % često), a televizijom 81 % (gotovo 11 % često).

Nastavnici se rjeđe koriste drugim izvorima na internetu poput foruma ili društvenih medija; 32 % ispitanika nikada ne posjećuje forume kada istražuje materijale vezane uz OOR, nešto više od 32 % to čini povremeno, a njih samo 8,61 % često. U ovome istraživanju 38 % (37,39 %) ispitanika gotovo se nikada ne koristi društvenim medijima (Facebook, Twitter, MySpace, GoldenLine, LinkedIn i drugim). Manje od 9 % koristi se tim portalima da bi potražili informaciju o obrazovanju za održivi razvoj. Dobro je primijetiti da danas gotovo svaka institucija ima svoj korisnički račun (profil) na jednome ili više društvenih medija i da redovito ažuriraju svoje stranice. Društven mediji omogućuju razmjenu informacija i nude dvosmjernu komunikaciju (uloge pošiljalca i primatelja mogu se zamijeniti). Nastavnici mogu raspravljati i dijeliti informacije te poboljšati svoje ideje. Uzrok averzija prema društvenim mrežama možda je vjerovanje da se te mrežne stranice uglavnom koriste za zabavu, objavljivanje fotografija i videa. Unatoč tome, nastavnici ne bi trebali odustati od tog oblika stjecanja znanja o OOR jer upravo ti portali mogu ponuditi više informacija ili inspiracije nego što se očekuje.

Radio je najmanje popularan izvor informacija i znanja. Više od 61,42 % ispitanika ne služi se radijem kako bi poboljšali svoje znanje o OOR, a njih 7,12 % bira radio kao medij kojim se s tom svrhom koriste prilično često.

### Tablica 3

Analizom rezultata istraživanja mogli smo odrediti koje varijable utječu na odabir određenih medija kao izvora znanja nastavnika o obrazovanju za održivi razvoj. Nastavnici u nižim razredima srednje škole često biraju tisak i *online* časopise, a povezanost izbora toga medija i varijable „razine škole“ statistički je značajna. Ta

povezanost prikazana je u tablici 4. Također je uočena povezanost između lokacije škole i upotrebe tiska kako bi nastavnici povećali svoje znanje o OOR. Nastavnici koji rade u manjim gradovima najčešće se koriste tim medijem, zatim nastavnici u velikim gradovima, a najrjeđe nastavnici u seoskim školama.

#### Tablica 4

Razina škole u kojoj nastavnici rade također je bitna kod izbora stručnih (uključujući metodike) časopisa kao izvora znanja iz područja održivoga razvoja, posebno obrazovanja. Za razliku od općeg tiska časopise namijenjene nastavnicima najčešće čitaju nastavnici u srednjim školama. Na taj izbor utječu godine profesionalnoga iskustva pa tako nastavnici koji rade više od 20 godina najčešće čitaju stručne časopise, zatim oni koji rade između 16 i 19 godina, nastavnici početnici (0-5 godina radnoga iskustva), kao i nastavnici s 10-15 godina profesionalnoga iskustva.

Predmet podučavanja postaje važan kod odabira filmova kao izvora znanja o obrazovanju za održivi razvoj i kod obrazovanja usmjerenog na održivi razvoj pojedinaca i svijeta. Analiza rezultata ukazuje na to da su videomaterijali izvori znanja o održivom razvoju za nastavnike stranih jezika i prirodnih znanosti. Mogući je razlog činjenica da lakše dolaze do te vrste materijala od nastavnika drugih predmeta. Korelacija je prikazana u tablici 5.

#### Tablica 5

Odabir filmova kao izvora znanja o održivu razvoju također ovisi o stupnju profesionalnoga napretka. U Poljskoj postoji pet stupnjeva napredovanja nastavnika: nakon što diplomira, nastavnik postaje „pripravnik“ koji poučava jednu ili dvije godine. Druga razina, nakon nekoliko godina rada u školi, nastavnik može postati „ugovorni nastavnik“. Nakon što položi ispit, nastavnik može dobiti status „nominiranog nastavnika“. Četvrta razina je „licencirani nastavnik“ i upravo na toj razini većina profesionalnih karijera završi. Poneki ipak uspiju doći do pete razine koja je počasna „profesor nastavnika“. Spomenuti odnos prikazan je u tablici 6.

#### Tablica 6

Odabir tradicionalnih, tiskanih knjiga i priručnika kao načina proširivanja znanja o održivu razvoju ovisi o dvije varijable: razina škole i lokacija. Korelacije su prikazane u tablicama 7 i 8.

#### Tablica 7 i 8

Kao što pokazuju analizirani podaci, više od 60 % nastavnika koji rade u višim razredima srednje škole često se koristi knjigama i priručnicima kako bi povećali svoje znanje o OOR. Broj nastavnika koji rade u nižim razredima srednje škole koriste se tiskanim knjigama i priručnicima vrlo često, slično kao i nastavnici u višim razredima srednje škole. Međutim, u nižim razredima srednje škole nastavnici se gotovo nikada ne koriste knjigama kao izvorom znanja o održivu razvoju.

S obzirom na lokaciju škole analiza je otkrila da gotovo svi nastavnici koji rade u ruralnim područjima tvrde da se koriste knjigama i priručnicima kako bi došli do novih informacija o OOR. U sve tri skupine broj nastavnika koji tvrde da se često koriste tim tradicionalnim medijem doseže gotovo 60 %. Međutim, više od 10 % nastavnika koji rade u manjim gradovima i 8 % onih koji rade u velikim gradovima uopće se ne koristi knjigama i priručnicima.

Ispitanike smo također upitali koriste li se modernim oblicima publikacija, poglavito e-knjigama koje su besplatno ili uz malu naknadu dostupne *online*. Postoji statistički značajna povezanost između primjene toga medija i vrste škole i lokacije, kao i godina profesionalnoga iskustva. Važno je naglasiti da su e-knjige među najdostupnijim, najvrjednijim i najpouzdanijim izvorima informacija vezanih uz OOR kao i znanjima o ciljevima, metodama, oblicima rada i temama koje pokriva obrazovanje za održivi razvoj. To je rezultat teze stručnjaka da materijali o održivu razvoju trebaju biti široko dostupni i imati otvoreni pristup.

Najveća skupina nastavnika koji se ne koristi e-knjigama kako bi povećali svoje znanje o OOR jesu oni koji pripadaju skupini s između 16 i 19 godina radnoga iskustva. Zanimljivo je da se više nastavnika koji najdulje rade (više od 20 godina) češće koristi e-knjigom od onih koji imaju između 11 i 15 godina radnoga iskustva i od nastavnika s najmanje radnoga iskustva (od 0 do 5 godina). Nastavnici koji se rijetko koriste elektroničkim publikacijama kako bi obogatili svoje znanje o održivu razvoju pripadaju skupini nastavnika s najkraćim radnim vijekom. S obzirom na razinu škole podatci ukazuju na to da se nastavnici u nižim razredima srednje škole često koriste e-knjigama. Njih gotovo 20 % to čini često, a samo 8 % nastavnika često čita e-knjige. Nešto više od 40 % nastavnika koji rade s učenicima u četvrtoj razini obrazovanja nikada se ne koristi e-knjigama (27,12 % u skupini koja radi u nižim razredima srednje škole). Korištenje e-knjiga ovisi i o lokaciji škole. Nastavnici u selima puno se češće koriste tim modernim medijem jer postoji mogućnost da nemaju pristup tradicionalnoj literaturi ili priliku sudjelovati u osposobljavanjima ili radionicama za razliku od nastavnika u velikim gradovima. Više od 45 % nastavnika u velikim gradovima nikada se ne koristi e-knjigama (mali gradovi 37,5 %, sela 23,44 %) i samo 5,88 % njih to čini često (mali gradovi 10,29 %, sela 21,88 %).

Danas se, zahvaljujući razvoju interneta, nastavnici mogu savjetovati i dijeliti svoje ideje, mišljenja ili znanja u forumima za rasprave. Istraživanjem smo otkrili da je odabir toga medija raznolik i da ovisi o razini škole i lokaciji.

Podatci prikazani u tablici 9 dopuštaju tezu da se nastavnici u nižim razredima srednje škole koriste online forumima češće, ali da to nije popularan način stjecanja znanja o obrazovanju za održivi razvoj; 45 % nastavnika srednje škole nikada ne traži rješenja konzultirajući se s drugim stručnjacima, a 6 % njih to radi često. Gotovo 25 % nastavnika nižih razreda srednje škole nikada ne traži informacije vezane uz OOR na forumima. Nešto više od 10 % ispitanika često se koristi tim oblikom učenja i dijeljenja iskustva.



Tablica 9

Još jedna varijabla koja utječe na način na koji se nastavnici koriste internetskim forumima jest lokacija škole. Nastavnici koji rade u ruralnim područjima puno se češće koriste forumima, a oni koji rade u manjim gradovima to rade najrjeđe. Slično tome, najveća skupina ispitanika koja je ukazala na često korištenje foruma s ciljem povećanja svojih znanja o održivu razvoju zaposlena je u selima (12,5 %). Samo 6,62 % nastavnika koji rade u manjim gradovima i 5,88 % onih koji rade u urbanim školama često se koriste *online* forumima.

Nastavnici različitih predmeta koriste se još jednim modernim medijem koji nudi *online* okruženje – portal zajednice – na drukčiji način i s drukčijom učestalošću. Medij koji se uglavnom povezuje sa zabavom, društveni medij može biti izvor dragocjenih i pouzdanih informacija o održivu razvoju i obrazovanju prema principima održiva razvoja. Istraživanje je pokazalo statistički značajnu povezanost između predmeta poučavanja i korištenja portala zajednice. Korelacija je prikazana u tablici 10.

Tablica 10

Nastavnici Znanosti i Prirodnih znanosti najrjeđe se koriste forumima (45 % nikada, 5 % često), a nastavnici Poljskoga jezika i Humanističkih znanosti vrlo rado. Više od 15 % nastavnika Stranoga jezika često sudjeluje u forumima.

Korištenje portala zajednice također ovisi o lokaciji škole. Nastavnici u seoskim školama koriste se portalima puno češće: 10 % često, 27,34 % ponekad. Više od 40 % ispitanika koji rade u malim gradovima i gotovo 50 % zaposlenih u velikim gradovima nikada se ne koriste *online* portalima.

Istraživanje je otkrilo da postoji statistički značajna povezanost između godina iskustva i odabira susreta sa stručnjacima kao izvora znanja o OOR.

Susreti sa stručnjacima najkorisniji su za nastavnike s najnižim radnim vijekom. Taj način povećanja znanja o OOR najrjeđe je biran od nastavnika s najviše godina profesionalnoga iskustva (16-19 godina i 20 i više godina). Popularnost susreta sa stručnjacima u skupini ispitanika s najmanje profesionalnoga iskustva (20 % često prisustvuje i više od 50 % to čini ponekad) može biti povezana s formalnim uvjetima koje nastavnici moraju ostvariti kako bi napredovali. Nastavnici koji žele napredovati u struci moraju dostaviti određene potvrde o sudjelovanju u različitim oblicima stručnoga usavršavanja. Stoga je taj način usvajanja i proširivanja znanja možda atraktivniji mladim nastavnicima nego nastavnicima koji su zaposleni 12 i više godina.

Korištenje drugih medija, tradicionalnih i modernih, kako bi se steklo i povećalo znanje o OOR, ne ovisi o varijablama koje su identificirane u ovome istraživanju (ne postoji statistička značajnost).

U sažimanju rezultata ovoga istraživanja, posebnu pozornost privuklo je nekoliko aspekata.

Nastavnici s duljim radnim stažom imaju više znanja o OOR, potencijalno zbog činjenice da s obzirom na godine rada stalno teže novim rješenjima, pokazuju interes

za nove trendove ili pojmove u obrazovanju. Nastavnici koji već imaju profesionalnoga iskustva ne moraju potrošiti toliko vremena na poučavanje i pripremu sadržaja kao što to moraju početnici. S obzirom na to da UNESCO promovira obrazovanje za održivi razvoj, naravno da to potiče velik interes među iskusnim nastavnicima. UNESCO je jedinica UN-a koju nastavnici poznaju, prepoznaju i u koju imaju povjerenje.

Zabrinjavajuće je da nastavnici poistovjećuju OOR s obrazovanjem za okoliš. Tri su područja održiva razvoja (osim okoliša, tu je društveno i ekonomsko područje) koja se već godinama naglašavaju u medijima, osposobljavanjima i publikacijama vezanima uz OOR. Unatoč tome, puno nastavnika smatra da je obrazovanje za održivi razvoj poglavito povezano sa zaštitom okoliša. Također, poistovjećuju načela OOR s načelima navedenima u izvješću UNESCO-a iz 1990-ih (npr. Jacques Delors' Education: the Treasure Hidden Within). To potvrđuje da su načela OOR nedovoljno promovirana među nastavnicima i u društvenim i profesionalnim krugovima vezanima uz obrazovanje.

Uočeno je da samo nekoliko nastavnika točno može opisati ulogu nastavnika u obrazovanju za održivi razvoj. Štoviše, ispitanici preferiraju predavački model poučavanja gdje su nastavnici aktivniji od učenika. Nadalje, nastavnici ne prepoznaju obrazovanje u sustavnom mišljenju kao jednom od glavnih načela OOR.

Zabrinjavajuće je da nastavnici podcjenjuju važnost medija za razvoj mladih osoba i društava. Vjerojatno je da je taj negativan stav prema medijima kao sredstvima u obrazovanju rezultat nedovoljnog znanja i slabe pismenosti u tome području. Puno nastavnika ne zna kako iskoristiti potencijal medija u procesu učenja i poučavanja.

Međutim, ohrabrujuće je da nastavnici točno mogu identificirati ishode učenja vezane uz ORR: skladan osobni razvoj, unutarnja ravnoteža i učinkovita suradnja. Također su osviješteni o temama koje bi se trebale pokriti obrazovanjem za održivi razvoj. Stoga iznenađuje da OOR poistovjećuju s obrazovanjem za okoliš.

Nastavnici preferiraju internet, knjige i susrete sa stručnjacima/usavršavanja kao načine na koje mogu poboljšati svoje znanje unutar OOR, a istodobno ne prepoznaju potencijal novih medija unatoč njihovoj privlačnosti (podkastovi, e-knjige/audio-knjige, *online* forumi, portali zajednice...).

Analiza rezultata istraživanja u ovome području upućuje na to da postoji velika potreba za daljnjim obrazovanjem i usavršavanjem znanja iz obrazovanja za održivi razvoj, pa tako i za služenje izvorima i metodama njihove upotrebe. Učinkovita upotreba medija i veće znanje učitelja o OOR doprinijet će ne samo boljoj kvaliteti obrazovanja nego ponajprije skladnom razvoju učenika i održivu razvoju društava.

## **Rezultati i zaključak**

Čini se da je održivost u smislu ljudskog opstanka i napretka prirodna društvena karakteristika koja je dio ljudskoga ponašanja od početka vremena pa bi tako nastavnicima koji rade u suvremenim školama (Giddens, 2009) trebalo biti jasno da moraju podržati skladni razvoj učenika i brinuti se o održivu razvoju u tri dimenzije: okoliš, ekonomija i društvo. To znači da bi trebali imati znanje o održivu razvoju i poznavati teze o obrazovanju posvećenome održivu razvoju.

Prema rezultatima istraživanja, nastavnici nemaju dostatno znanje o obrazovanju za održivi razvoj. Najviši rezultat iz testa vezanoga uz polazišta, ciljeve i ulogu nastavnika u OOR ostvarili su nastavnici Poljskog jezika, Stranih jezika i Humanističkih i društvenih znanosti. To znači da unatoč tome što se OOR uglavnom povezuje sa zaštitom okoliša i aktivnostima u smjeru poboljšanja stanja našega planeta, upravo nastavnici Humanističkih i društvenih znanosti pokazuju veći interes za polazišta održivoga razvoja nego što to čine biolozi, geografi, matematičari i kemičari. Štoviše, oni prepoznaju i zadatke nastavnika kada je riječ o održivu didaktičkom procesu, osviješteni su o principima u pozadini Europskog koncepta obrazovanja za skladan razvoj i prepoznaju poželjne metode poučavanja. Nastavnici Prirodnih znanosti i Znanosti zanemaruju principe OOR vjerojatno zbog toga što pogrešno ograničavaju obrazovanje za održivi razvoj na određene aspekte obrazovanja za okoliš. Nadalje, nastavnici koji imaju dulji radni staž imaju više znanja iz područja obrazovanja za održivi razvoj i podržavaju učenike u skladnom razvoju. Mogući je razlog činjenica da su se ti nastavnici „udomačili“ u svojoj profesiji, da su odlučni u održavanju visoke kvalitete svoga rada, a to možemo povezati sa stavom odgovornosti prema polazištima UNESCO-a vezanim uz obrazovanje. Važno je istaknuti da je 17 ciljeva za održivi razvoj do 2030. (prvobitno cilj 4 — osigurati kvalitetno obrazovanje i promovirati prilike za cjeloživotno učenje sve djece, mladih i odraslih) promovirano i uvelike raspravljano u medijima i u pedagoškim raspravama. Nastavnici koji su predani profesionalnom radu i koji žele povećati svoja nastojanja za osiguranje skladnoga razvoja svojih učenika zasigurno su u većoj ili manjoj mjeri upoznati s polazištima OOR. Prema istraživanju, mnogi nastavnici, često oni s više godina radnoga iskustva i višim stupnjem profesionalnoga napretka, primjenjuju barem neke od principa OOR u svakodnevnom radu. Na žalost, postoji velika skupina nastavnika koji zamjenjuju principe OOR s drugim izvješćima UNESCO-a poput izvješća *Education: the Treasure Hidden Within*. To znači da je Delorsovo izvješće bilo uspješnije promovirano među nastavnicima nego što je to moderna paradigma obrazovanja čiji je cilj skladan razvoj učenika.

Nadalje, istraživanje ukazuje na to da nastavnici jezika (materinskoga i stranoga), nastavnici Humanističkih i društvenih znanosti imaju više znanja o održivu razvoju i više se usredotočuju na ključne probleme OOR, koriste se različitim didaktičkim metodama kako bi oblikovali ključne kompetencije, pokušavaju obogatiti svoje poučavanje različitim didaktičkim oblicima poput promatranje modela ili terenske nastave. Na taj način omogućuju skladan razvoj učenika i to čine bolje od nastavnika Znanosti, Prirodnih znanosti, Matematike i Tehničkog odgoja. Dio njihova rada podrazumijevaju i karakteristike predmeta (humanističke znanosti koje su rezultat vjerovanja da su ljudi najveća vrijednost pa je stoga briga o složenom razvoju uvijek bitna). Najbolje rezultate u tome području ostvarili su nastavnici koji su se „udomačili“ u svojim profesionalnim karijerama kao nominirani nastavnici te streme najvećem stupnju profesionalnoga napretka, kao i pedagozi koji su licencirani nastavnici. Nastavnici s manje godina iskustva vjerojatno više vremena potroše na pripremu nastavnih sati pa je njihovo znanje vezano uz OOR niže, a njihove didaktičke metode nisu toliko raznovrsne.

Glavni izvor znanja o principima i ciljevima obrazovanja za održivi razvoj i metode implementiranja jesu materijali objavljeni na mrežnim stranicama i knjige. Moderni mediji poput portala, e-knjiga, *podkastova* ili *online* foruma nisu popularni među nastavnicima kada istražuju informacije i znanje o održivu razvoju. Bilo bi uputno uvjeriti nastavnike da su multimedijски mrežni izvori dragocjena podrška u osmišljavaju održiva obrazovnog procesa. Novi mediji osiguravaju dvosmjernu komunikaciju: pošiljatelj – primatelj – pošiljatelj. To daje vrijednost kod dobivanja informacije i stručnosti te nudi mogućnost evaluacije i rasprave o vrijednosti informacije.

### ***Napomena***

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