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EDUCATION FOR CHANGE: HIGHER EDUCATION IN CROATIA FOR SUSTAINABLE DEVELOPMENT

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Abstract

Purpose - Sustainable development is one of the key elements of any society's progress. It includes economic vitality, equity, social cohesion, environmental protection and sustainable management of natural resources. Educating new generations for sustainable development will increase awareness, enable better governance, critical thinking and the development of new methods and tools for a safer and healthier world. The importance of education for sustainable development (ESD) was recognized in the 1990s and as a result the United Nations Economic Commission for Europe adopted the Strategy for Education for Sustainable Development in March 2005. At the United Nations Sustainable Development Summit the 2030 Agenda for Sustainable Development was adopted, setting 17 sustainable development goals. The 4th goal of the Agenda 2030 is to ensure inclusive and quality education and to promote lifelong learning opportunities. Accordingly, World Education Forum 2015 adopted the Incheon Declaration for Education 2030 and Framework for Action for the implementation of Sustainable Development Goal 4. The purpose of this paper is to determine the scope of application of the Strategy for Sustainable Development in the Republic of Croatia in higher education and areas for improvement and the possibility of implementing Incheon Declaration for Education 2030 in the Croatian education system with determining the knowledge and opinions of students about the above. The theoretical part of the paper explains sustainable development in general, principles, goals, elements and conceptually defines education for sustainable development. This is followed by the basic assumptions, goals, principles and implications of the Strategy and their application in Croatia. The empirical part of the paper includes the results of the primary research conducted in 2022 among students of Croatian higher education institutions. The research was conducted using the survey questionnaire technique. Their knowledge, education and interest in sustainable development are analyzed. The methods used in this paper are deductive, inductive, method of analysis and synthesis and descriptive method. The result of the paper is an overview of documents related to education for sustainable development, evaluation of the success of the implementation of the Strategy in the Republic of Croatia and the possibility of applying the Incheon Declaration to higher education and knowledge and opinions of students. The importance of sustainable development is also evidenced by the large amount of literature dealing with this topic, however, a small number of authors research ESD. In this sense, this paper contributes to the discussion of this concept in the context of higher education, and since it presents the results of primary research for the first time, it gives a concrete original scientific contribution to this topic and is a good basis for further research.

Keywords sustainable development, higher education, Strategy for Education for Sustainable Development, Incheon Declaration for Education 2030

INTRODUCTION

The concept of sustainable development is not new but its importance caught the public eye in 1987. when UN's World Commission on Environment and Development issued a report called "Our Common Future". Problems such as hunger, a worsening of poverty, ill health, the deterioration of the ecosystems has led to a need for global action. For

development to be sustainable international cooperation and global partnership is a necessity. The need to preserve our resources has never been more obvious. When it comes to sustainable development the time to act is now. The importance of education for sustainable development was recognized in the 1990s. That's led to adoption of Strategy for Education for Sustainable Development in March 2005. and Incheon Declaration for education 2030 in May 2015. The latter accentuates education as key enabler of all 17 goals of Agenda 2030 which is a plan in areas of critical importance for humanity and the planet.

1. SUSTAINABLE DEVELOPMENT (SD) CONCEPT AND DEFINITIONS

The Lexicon of sustainable development defines SD as a process that has several definitions, and mentions the one published in the report "Our Common Future" by the UN World Commission on Environment and Development from 1987 as the most well known and most frequently used. According to that definition SD is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The broader meaning of the definition is that economic and social factors as well as factors related to environmental protection should be systematically taken into account when deciding and carrying out activities by which every organization creates value (Bačun, Matešić, Omazić 2012, 195). This definition is attributed to the Norwegian president at the time, Harlem Brundtland. Kilipiris (2005, 29) states that the Brundtland definition of SD remains the most popular in use today. Also notes that: "... in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs". "Sustainable development can also be understood as a perfect harmony between the quality of life, then a certain level of economic and social development, purposeful use of natural resources and preservation and improvement of natural and cultural heritage" (Fetahagić 2008). Rončević (2008, 15) suggests that SD is a vision of the future, and sustainability is a development criterion; concept and process within which a higher awareness develops and reflects on the consequences of human action on biological and social systems, tends to design, create, implement and monitor SD solutions that reduce the negative impact of human action on the environment and society, and is only possible with cooperation of all stakeholders in society and changing the way of thinking and the existing (anthropocentric, materialistic) value system in the direction of a biocentric and holistic approach. Today, it is suggested "the need for active involvement of all social, political and other institutions and individuals in the comprehensive consideration of development" (Čavrak 2003, 73). According to Matešić (2020, 153) SD, as the only alternative development model defined so far, has been a concept for almost thirty years without a serious long-term alternative.

2. EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Education for sustainable development refers to educational programs and experiences designed to enable the acquisition of knowledge, skills and values necessary to shape a sustainable future. (UNESCO 2015, 2017 in Vukelić 2020, 142-143) Linking

education and SD began with questioning the way to implement Agenda 21 (Action plan for education for sustainable development 2011, 4). Lay and Puđak (2008, 97) state that the process of SD is inseparable from the process of learning because without learning about SD, there is no process of affirming SD. "Education is a requirement for changing behavior and informing citizens about key competencies for achieving sustainable development because it contributes to greater social cohesion and well-being by investing in social capital, creating equal opportunities, especially for individuals in a less favorable position, and public participation" (Bačun, Matešić, Omazić 2012, 187).

The United Nations declared the period from 2005 to 2014 as the Decade of Education for Sustainable Development. The Handbook for ESD states that education for sustainable development is education for life. In addition to acquiring knowledge, it is necessary to acquire values, attitudes and procedural knowledge and to develop a willingness to get involved and act in accordance with one's own beliefs and principles (Education for sustainable development, Handbook for primary and secondary schools, 2011, 19). „Education for Sustainable Development (ESD) is a form of education that accentuates the development of skills and habits needed for individuals and their communities to live in a way that contributes to a sustainable world“ (Egaña del Sol, 2020, 1). „The underlying idea of ESD is to empower students with sustainability competences through a holistic interdisciplinary perspective of content and pluralistic learner-centered democratic teaching strategies“ (Boeve de Pauw et al. 2015, 15694). ESD is special because it includes recent knowledge from different fields of science. In the field of social sciences, it includes and seeks the application of knowledge from the fields of pedagogy, psychology, sociology as well as a number of other scientific disciplines in which the ESD's unique transformational potential can be recognized (Rončević and Lončarić, 2021, 116). Lučin et al. (2008, 69) claim that ESD „is the basis for development and promotion of relevant competencies, attitudes and values that motivate every citizen to participate in creation of sustainable future“. According to Lay (2007, 1031 and 1037) two basic pillars of SD are „learning for sustainability“ and „leading in the direction of sustainability“. The role of educational system at all levels will be to create and spread sustainability as a development value and the role of higher education system will be to offer knowledge and findings that guide the mastery of applied knowledge that leads to SD solutions (2007, 1047-1048). „Changing individual behaviors and motivating collective action is essential to achieving a sustainable future and is therefore a central motivation of sustainability education. A robust approach incorporating diverse knowledge domains as well as other factors is essential to educating for sustainable behavior change“ (Frisk, Larson, 2011). Rončević (2011, 20) believes that it is necessary to increase awareness and knowledge about the ways of practical realization of SD in everyday life. She attributes a special responsibility to the academic community and students who will soon make new development decisions and/or educate new generations. The implementation of SD in education implies a change in value orientation and the realization of new guidelines of sustainable ethics, namely: quality of learning, partnership and cooperation in a pleasant and stimulating environment for the benefit of future generations (Močinić, Čatić, Tatković, 2008, 346). The goal of ESD is the acquisition of a wide range of competencies that include knowledge, skills, values and the willingness to act and live in accordance with the declared attitudes (Garašić, 2008, 108). Planning ESD activities and introducing SD into education means linking it with already developed and existing subjects/themes by establishing connections with natural, ecological, cultural, technological, social (and

political) meanings (Action plan for education for sustainable development, 2011, 41). Institutions of higher education have a key role in development of knowledge-based economy as centers where people who will lead future processes and the society are developed (Lučin et al. 2008, 74). Educational institutions should educate specialists that will be capable of applying the elements of responsible business and thus move SD to the level of an established, generally accepted and recognized method for achieving the competitiveness of companies (Tanković i Matešić, 2009, 84).

3. AN OVERVIEW OF DOCUMENTS RELATED TO EDUCATION FOR SUSTAINABLE DEVELOPMENT

A series of documents, strategies and conventions that tried to harmonize the issue of the definition of SD and find ways to understand it, and then to implement it, were adopted at the global level.

The importance of education for sustainable development (ESD) was recognized in the 1990s. At the United Nations conference on environment and development in 1992. Agenda 21 was adopted. Chapter 36. of the agenda dedicated to education, public awareness and training names three goals: reorienting education towards SD, increasing public awareness and promoting training. Leaning on the Agenda United Nations Economic Commission for Europe adopted the Strategy for Education for Sustainable Development in March 2005 (Strategy ESD, 2005). „The aim of this Strategy is to encourage UNECE member States to develop and incorporate ESD into their formal education systems, in all relevant subjects, and in non - formal and informal education. The objectives of this Strategy, which will contribute to the achievement of the aim, are to: (a) ensure that policy, regulatory and operational frameworks support ESD; (b) promote SD through formal, non-formal and informal learning; (c) equip educators with the competence to include SD in their teaching; (d) ensure that adequate tools and materials for ESD are accessible; (e) promote research on and development of ESD; (f) strengthen cooperation on ESD at all levels within the UNECE region.“ The Strategy emphasizes that the meaning of SD is evolving so the development of a sustainable society should be seen as a continuous learning process claiming that learning targets for ESD should include knowledge, skills, understanding, attitude and values. Poverty alleviation, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, security, human rights, health, gender equity, cultural diversity, rural and urban development, economy, production and consumption patterns, corporate responsibility, environmental protection, natural resource management and biological and landscape diversity are stated as key themes of SD. „Higher education should contribute significantly to ESD in the development of appropriate knowledge and competences.“ „ESD requires multi-stakeholder cooperation and partnership. The main actors include governments and local authorities, the education and scientific sectors, the health sector, the private sector, industry, transport and agriculture etc. „, ESD insists on dealing with problems and identifying possible solutions in a way that retains its traditional focus on individual subjects and at the same time opens the door to multi- and inter-disciplinary examination of real-life situations impacting the structure of learning programs and the teaching methods.

The Sustainable Development Strategy of the Republic of Croatia was adopted in February 2009. The direction of Croatia towards SD is based on certain general principles, among which is education for sustainable development. The key challenges of achieving SD of the Republic of Croatia are based on eight key areas, and in each of them, certain assumptions need to be met, including raising the educational level of all citizens and building a knowledge-based society (Education for sustainable development, Handbook for primary and secondary schools, 2011, 24, 25). In 2011, the National Action Plan for Education for Sustainable Development was adopted as an instrument for implementing the Sustainable Development Strategy and promoting SD in education. Its goal is to “develop policies, regulatory and operational frameworks to support education for sustainable development, equip professors, teachers, trainers and decision-makers with the necessary competencies and knowledge, prepare appropriate educational tools and materials for education for sustainable development, promote research and development, to strengthen the capacities of civil society and the media and their partner roles in the implementation of sustainable development” (Action plan for education for sustainable development 2011, 6).

The Republic of Croatia, as a member of the UNECE, was obliged to report regularly on the implementation of the UNECE strategy for education for sustainable development, so three reports were prepared - in 2010, 2014 and 2018. In the report for 2010, related to higher education, it was stated that ESD is dealt with in postgraduate programs at the master's and doctoral level. However, the extent to which ESD is processed depends on the type and content of the program. Also, some scientific conferences that partially include ESD are mentioned (Format for reporting on the implementation of the UNECE Strategy for Education for Sustainable Development, 2010). In the report for 2014, it is stated that the biggest problem faced in the implementation of the ESD Action Plan is the lack of human and financial resources. Studies (mainly post-graduate) dealing with SD are listed. All key topics claim to be covered in study programs at all levels (Phase III: Format for reporting on the implementation of the UNECE Strategy for Education for Sustainable Development, 2014). The report for 2018. states that the Croatian Parliament established Croatian Science Foundation whose mission is to promote science, higher education and technological development in Croatia. The Foundation provides support to scientific, higher education and technological programs and projects, fosters international cooperation, and helps the realization of scientific programs of special interest in the field of fundamental, applied and developmental research. It claims that all of the key themes are present in all levels of education, but only some of them at the postgraduate level (Format for reporting on the implementation of the UNECE Strategy for Education for Sustainable Development, 2018). The implementation of the Strategy for Education for Sustainable Development in Croatia seems to be more oriented on primary and secondary education and lifelong learning than on higher education system. The reason for that might be in the fact that universities and higher education institution decide for themselves which new study programs they will create and how they will change the current ones. The ministries and the politics do not have as much influence as they do at lower levels of education. Some higher level institutions recognized the importance of ESD but in order for it to be implemented in all the study programs, directives and regulations need to address this problem. For example, if some level of implementation of ESD is inserted in quality standards for higher education it would be obligatory for them to apply it to meet the necessary standards. Jelić - Mück and Pavić - Rogošić in

the document Overview and evaluation of the progress of the implementation of Agenda 21 in Croatia (2002, 18, 19) state that at the level of universities, polytechnics and state scientific research institutes and other institutions, ESD and environmental protection is unsatisfactory, in undergraduate and postgraduate teaching, just like in scientific research work.

At the United Nations Sustainable Development Summit, in September 2015, the Global Development Program until 2030 (Agenda 2030) was adopted, which contains 17 SD goals. They represent a superstructure on the eight Millennium Development Goals that characterized the period up to 2015. Special emphasis is placed on education, which is seen as a means of achieving all 17 goals, but it is emphasized that one of the goals is the development and provision of inclusive and quality education (Vukelić 2020, 142 - 143). The UN program for SD until 2030 represents an upgrade of the Brundtland Commission from Rio in 1992. "It turned out that the previously adopted documents failed to transform the concept of sustainable development into a practical and understandable activity, so the role of the 2030 Program primarily lies in concisely set goals that will enable easier implementation of this concept" (Vukobratović, Rončević 2020, 98).

Incheon declaration for education 2030 was adopted in May 2015. The declaration states that education is at the heart of the 2030 Agenda and essential for the success of all SDGs. "Tertiary education and universities play a vital role in stimulating critical and creative thinking and generating and disseminating knowledge for social, cultural, ecological and economic development. A well-established, properly regulated tertiary education system supported by technology, open educational resources and distance education can increase access, equity, quality and relevance, and can narrow the gap between what is taught at tertiary education institutions, including universities, and what economies and societies demand" (Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4, 2015).

From the very beginning, Croatia has been involved in global and European processes of discussion and planning of SD, and has supported key documents in the field of SD, such as Agenda 21 and Agenda 2030. In 2018, the National Council for Sustainable Development was established, whose basic purpose is to propose measures and activities and to monitor, coordinate and analyze the implementation of the goals of the 2030 Agenda (Ministry of Foreign and European Affairs, 2019 in Vukelić 2021, 22). At the same time, it should be emphasized that ESD has its special place in the strategic documents of SD planning in the Republic of Croatia. The National development strategy was adopted in February 2021. Its strategic goal 2. Named "Educated and employed people", states that education plays a key role in preparing future adults for life in the community, primarily through instilling common values and accepted norms of behavior. Regarding higher education, it is stated that the legal framework of higher education will be improved, which will define and expand the models of public and private financing, quality assurance and management at higher education institutions. Special emphasis will be placed on the acquisition of relevant skills through practical work and professional practice. The scholarship system will encourage excellence and research work and make it easier for students from a weaker social status to study. The priorities are the development of the higher education system and internationalization in accordance with modern European trends through improving the availability of quality

higher education, relevant in relation to the labor market and society, as well as the development of student standards, infrastructure and work, and university cities as nurseries of knowledge and talents (National development strategy, 2021).

4. RESEARCH RESULTS AND DISCUSSION

Primary research was conducted in May 2022 among 142 students of Croatian higher education institutions. The research was conducted online, using the survey questionnaire technique distributed to the students via e-mail. The methods used in this paper are inductive, method of analysis and synthesis and descriptive method. The methods applied encompass general and logical analysis, and comparative and generalization methods. For the purposes of collecting empirical data on the selected variables, a network survey procedure was used, and as an instrument, a multiple questionnaire structured from several different content-construct units. The aim of this research was to find out the level of knowledge on SD and the source of information for student population. Key factors for achieving SD and relevant topics as well as different actions that can benefit the growth of SD were asked. The hypothesis was that students did not get enough information on SD through the education system, especially higher education. Also that they connect SD mostly with environmental protection and economy and that, as a consequence, their attitudes and lifestyles do not provide guarantees for the necessary access to this area.

4.1. Results

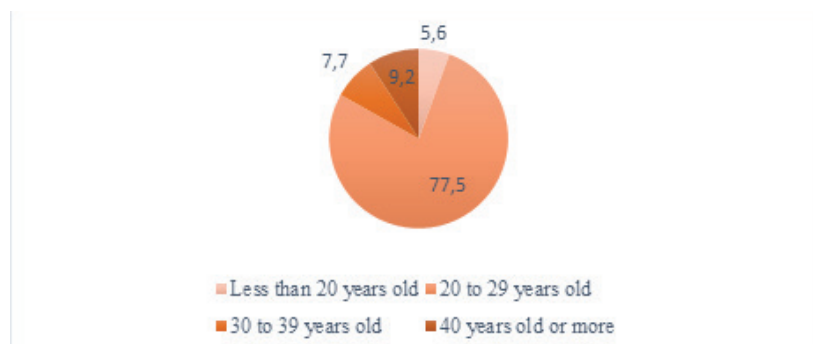
First, the information about their age was obtained. Second, the place where the students live was divided into three areas.

Students assess their current knowledge on sustainable development as average. Most of their knowledge on SD is gained by the media and the social networks, but some have learned about SD through their education.

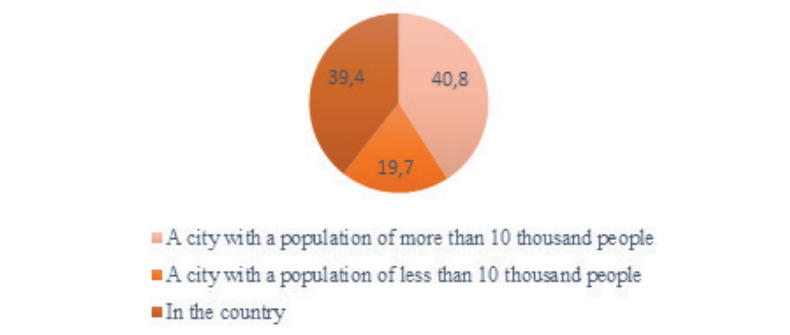
Most students find that SD is very important for the future of humanity.

When it comes to key factors in achieving SD, education was the dominant answer.

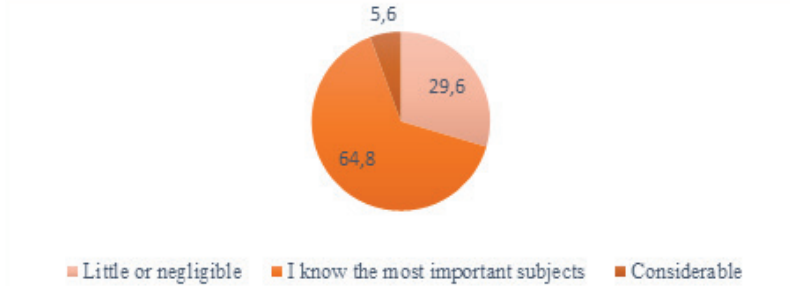
Graph 1: What age group do you belong to?



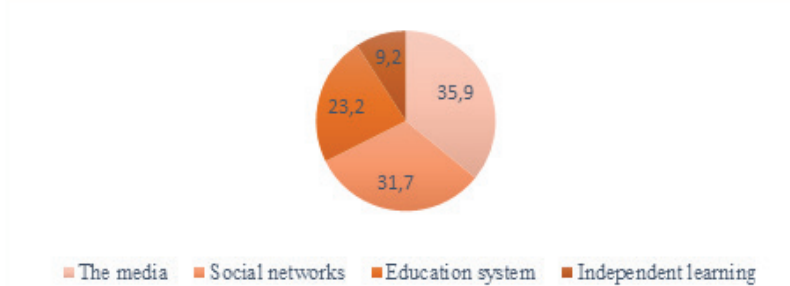
Graph 2: Your residence is in:



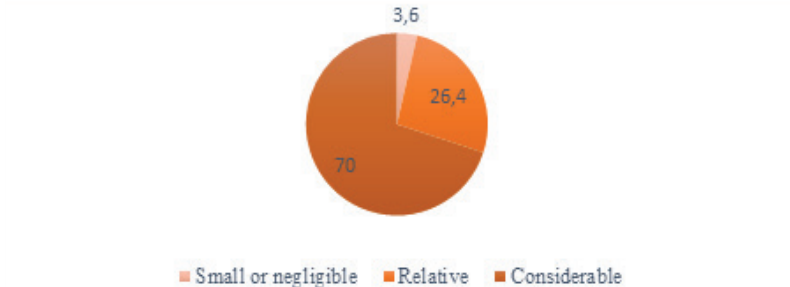
Graph 3: Your knowledge on sustainable development is:



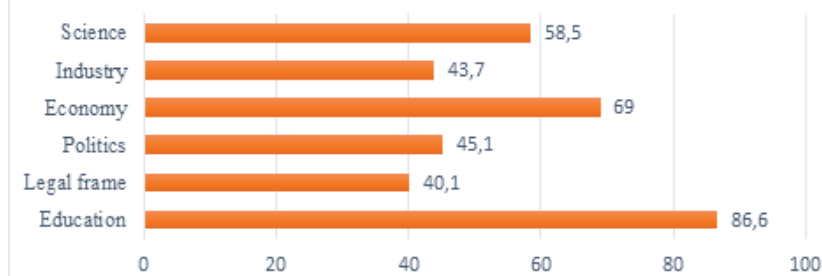
Graph 4: What is your main source of information on sustainable development?



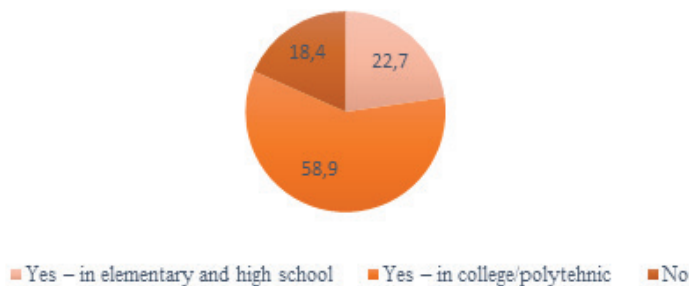
Graph 5: In your opinion, what is the importance of sustainable development for the future of humanity?



Graph 6: **What do you consider key to achieving sustainable development?**

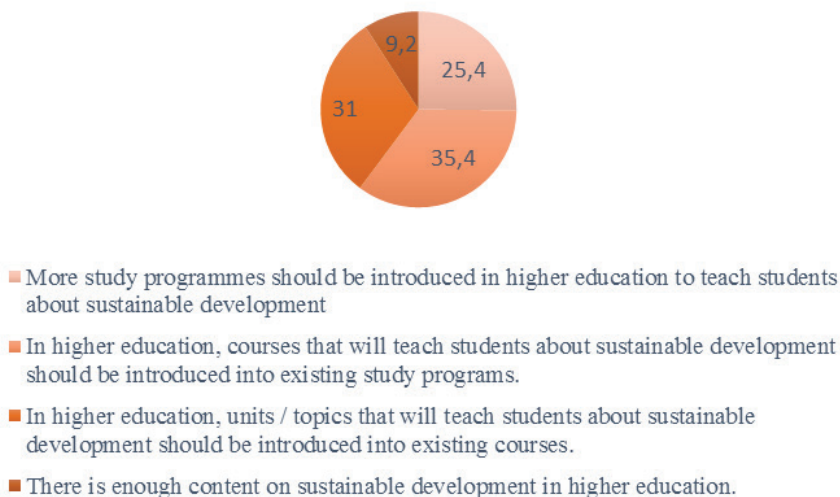


Graph 7: **Have you encountered thematic units/classes/courses related to sustainable development in your formal education so far?**



Most students claim that they have encountered thematic units/classes/courses related to SD in their formal education. Most students think that courses that will teach students about SD should be introduced into existing study programs but a lot of them think that units/topics that will teach students about SD should be introduced into existing courses. Some think that there should be more study programs about SD introduced in higher education but a small number think that higher education covers enough already.

Graph 8: **Which statement do you consider correct?**



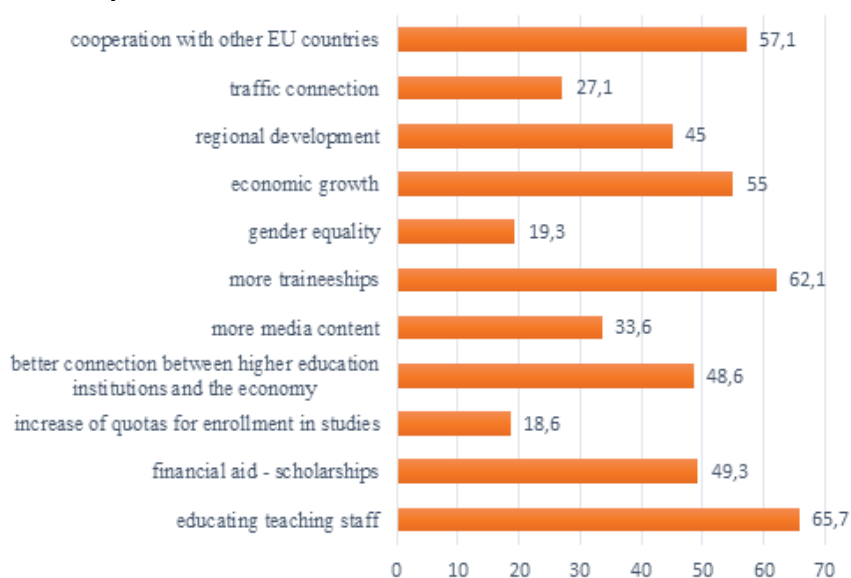
Graph 9: Which topics covered by sustainable development do you consider the most important?



When it comes to importance of topics covered by SD most students connect it with environmental protection but consider human rights and climate changes very important as well. More than 50% of students find that natural resource management, poverty alleviation and environmental health very important. Least important topics, to them, are production and consumption patterns, ethics and philosophy and peace.

When asked what is needed for education for sustainable development to come to life in Croatia most students think it's necessary to educate teaching staff but also to have more traineeships, cooperate with other EU countries and to achieve economic growth. They marked traffic connection, gender equality and increased quotas for enrollment as least important.

Graph 10: **What is needed for education for sustainable development to come to life in the Republic of Croatia?**



4.2. Discussion

The majority of students were (as expected) in the age group 20 to 29 years old which is the usual age for studying in Croatia. Even though 41% of them live in city with a population of more than 10 thousand people, a large number of 39% live in the country and the rest, who live in a small town are basically living in rural areas. There seems to be no common denominator for students living in the country compared to those living in cities in any of the questions. The level of knowledge on SD is average. Students of age 30+ mostly got their information on sustainable development through media and those under 20 through social networks, as expected. Large number of students find that sustainable development is very important for the future of humanity but there is still a critical number of skeptical ones. A disappointing number of 23% of students learned about SD in education system. Recognizing education as the key factor for achieving SD gives an optimistic view of the future. Students consider economy and science quite important but most of them do not understand the connection between science and education and importance of legal acts. Most students claim that they have encountered thematic units/classes/courses related to SD in their formal education, surprisingly almost 60% in college/polytechnic. Students under 20 years of age (which are basically first year students) studied SD in elementary and high school, and most of the older students in college/polytechnic. Older students mainly think that courses that will teach students about sustainable development should be introduced into existing study programs and the younger ones think that units/topics that will teach students about sustainable development should be introduced into existing courses. These results support the fact that most students believe that SD is just additional content that they should master, and

the concept of sustainable development is not recognized as an integral part of everyday human activity. Older students recognize more topics as relevant than the younger ones. Probably due to lack of information, a certain insensitivity to the issue of SD can be read from this. Still most student believe that environmental issues are the most relevant topics in SD, probably due to lack of information on what SD is and as a consequence, their attitudes and lifestyles do not provide guarantees for the necessary access to this area. Students recognize the importance of educating educators, learning through practice and absorbing good practice models of other countries. Findings about what is needed for education for sustainable development to come to life in Croatia suggest the conclusion that students do not really have a differentiated opinion on the ways in which ESD can be deeply implemented. The hypothesis that students did not get enough information on SD through the education system is true in general, but it seems that higher education institutions are not falling behind primary and secondary education which was the case a few years ago.

CONCLUSION

Sustainable development includes economic vitality, equity, social cohesion, environmental protection and sustainable management of natural resources. All social, political and other institutions and individuals need to actively involve in the comprehensive consideration of development. Individuals, in order to contribute to sustainable development, must learn to understand the complex world they live in and need to be able to collaborate, speak up and act for positive change. Education is recognized as a key driver to increase awareness, enable better governance, critical thinking and the development of new methods and tools for a safer and healthier world. A series of documents about sustainable development were adopted at the global and national level. The latest one (Agenda 2030) emphasizes education as a means of achieving all the established goals. Croatia's National development strategy recognizes education's key role in preparing future adults for life in the community and has strong conceptions regarding higher education. However, analysis of these documents shows that education for sustainable development in Croatia seems to be more oriented on primary and secondary education and lifelong learning than on higher education system. The reason for that could be the disciplinary limitation of study programs and research projects and institutional inflexibility. Higher education should introduce more flexible options for comprehensive ESD, encourage integrative and multidisciplinary approaches, support the cooperation of the economy with educational and scientific research institutions and encourage participation of businesses in the design of educational programs. Directives and regulations also need to address this problem. Well-established, properly regulated tertiary education system supported by technology, open educational resources and distance education can increase access, equity, quality and relevance, and can narrow the gap between what is taught at tertiary education institutions and what economies and societies demand. This paper emphasizes the importance of education for sustainable development through analysis of global and national documents on sustainable development. Specific suggestions can be given in future research after the legal framework of higher education is improved and more implementing acts are in force. Students included in this research make up only about 0.1% of the student population in Croatia so a bigger sample would give more accurate results. This research shows that the student population does not fully understand the

true concept and importance of sustainable development in everyday life and the future of society. Future research should include more students and more higher education institutions analyzed according to the similar study programs. The research topics could lean on previous research for comparison. Education institutions need to implement more content on sustainable development to in order to provide students with values, knowledge and skills for sustainable living in the community.

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