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“Education for sustainable development is a life-wide and lifelong endavour which challenges individuals, institutions and societies to view tomorrow as a day that belongs to all of us, or it will not belong to anyone.”

(UNESCO, 2004)
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1. Introduction

1.1. Why focus on ESD why ESD is important?

“*The world continues to face various critical challenges such as: human-induced climate change, the rapid depletion of natural resources, the frequency of natural disasters, the spread of [old and new] infectious diseases, the loss of biodiversity, the violation of human rights, increased poverty, the dependency of our economic systems on continuous growth in consumerism and so forth. Sustainable development (SD) has become a vehicle around the globe for expressing the need to depart from present dominant models of development which appear unable to balance the needs of people and the planet in the pursuit of peace and prosperity.***” (UNESCO, 2009, p. 6.)

Entire generations are at least in part shaped in their attitudes, personal and communal aspirations, in their development goals, by what formal educational systems equipped them with in terms of conceptual toolboxes and mental models. If the current predicament is seen as unbalanced, as not sustainable through the forthcoming generations and thus in need of alteration, it cannot be altered using the existing dominant ways of acting and living (Tillbury, 2007). And those ways of acting and living are, at least partly, a product of the existing formal education. In order to abandon them educational systems have to be reconceptualised to provide current and future generations with new mental models of material, living and social environments and their role in the socio-economic processes.

Among traditional tasks of equipping young people to become successful members of national and global communities, formal education will also have to enable them to live together in way that contributes to sustainable development of their communities. **Education for sustainable development (ESD)** is a formal education’s response to global challenges in order to help students understand what sustainable development requires globally and locally, help them understand how to use their own capacity for critical reflection and systemic futures-thinking and motivate them to consider individual actions contributing to communal sustainable development.

1.2. Why we were doing this study?

UNESCO’ (2009) reports that the most common global response to the calls for inclusion of ESD into formal education is to make adjustments (either minor or
substantial) to the existing educational system, with all its pre-existing strengths and weaknesses. However, all additions to the national formal education curricula struggle with an already crowded curriculum which has a primary task of teaching the basics of reading, writing and arithmetic. ESD content can be seen as “an integrative, cross-curricular theme that can bring together many of the single issues that schools are already expected to address” (UNESCO, 2009, p. 48).

The research sets out to map the content that already exists in the national curricula, the content that is either explicitly aligned with the teaching for sustainable development, or is related to it. Based on such mapping it is expected to show how the existing curricular content can be modified (in minor or substantial manner) to contribute to ESD. Besides curricular mapping it is looking into the subject curricula and textbooks concerning the same ESD content. Though not as comprehensive as the curricular mapping, these provide a clearer idea of how important goals expressed in the Framework Curriculum are presented directly to the pupils.

It is expected that this mapping will provide the foundation in each of the participating countries for a public debate on inclusion of ESD learning outcomes in the national curricula (and further educational documents based on them) and their importance for future sustainable development. It is expected that it will point out and stress the important role the formal education has in actively shaping a more secure future for the next generation.

1.3. Sustainable Development and Education for Sustainable Development

The Notion of Sustainable Development

According to the World Commission on Sustainable Development (WCSD) report, also referred as the Brundtland Report “Our Common Future” (WCED, 1987), sustainable development marks the ability of “humanity to /…/ ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.” Thus, the report called for the need to look beyond today’s needs and short-term effects of decisions.

The pursuit for sustainable development continued at the Rio Summit in 1992 in signing the Agenda 21, the commitment was renewed in the Summit on Sustainable Development in Johannesburg in 2002 (Rio+10). In 2012 the Rio process shall celebrate its 20th anniversary, but the definition of SD evolves further. The evolution of SD has been marked by the attempts to develop a clear notion. However, it has been realized that defining SD is actually implementing the SD. Today, sustainability is firmly embedded in the language of development - locally, globally and at every level
between, but according to several authors the popularity of the notion has been accompanied by more verbal adherence than practical implementation (Gibson et al. 2005). Moreover, the practice at all levels mostly still follows the mainstream economic growth agenda. The difficulties to apply the SD derive from the need for fundamental changes in values and perceptions, but also political and administrative structures.

SD is very much context dependant (social-cultural, political, economic and other) and the interpretation of sustainability changes between contexts and also over time, as new knowledge emerges. Weaver and Rotmans (2006) propose to the use ‘sustainability interpretation’ rather than ‘sustainability definition’. In addition to the social context, the interpretation of SD may depend on other perspectives, such as on the extent of trade-offs made between values (economic, social and environmental).

In conclusion, the concept of sustainable development has created a great challenge for the socio-economic development. The concept of weak and strong sustainability (WS and SS) has questioned the limits of the Planet Earth to cope with the growing demand for resources and the thresholds for harmful impacts. Rockström et al. (2009) have identified the Earth-system processes and associated thresholds which, if crossed, generate unacceptable environmental change. This group of researchers has presented evidence that three boundaries of Earth-system processes (climate change, rate of biodiversity loss, nitrogen cycle) have been overstepped already. The debate over WS and SS is largely about the options for substitutability of natural assets, on one hand, and the acceptability of this by people and communities on the other hand. Understanding of the SD concept assumes to look beyond today’s needs and short-term effects of decisions. Developing this ability has become much in the focus of the education for sustainable development.

Education for Sustainable Development

While the roots of education for sustainable development (ESD) could be traced back to the early 1970s ESD was formally tabled at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. UNCED among other landmark publications, it also resulted in “Agenda 21” which provides a comprehensive plan of action to be taken globally, nationally and locally by UN agencies, governments and major organizations and networks to reduce the human impact on the environment. “Agenda 21”, the Rio Declaration on Environment and Development and the Statement of Principles for the Sustainable Management of Forests were adopted by 178 Governments. The Commission on Sustainable Development (CSD) was created in December 1992 to ensure effective follow-up of UNCED and to monitor and report on implementation of multilateral environmental agreements.
Chapter 36 of Agenda 21 is addressing the education, training and public awareness. 

UNESCO has been designated as Task Manager for ESD to address four overarching goals (http://www.un.org/esa/dsd/agenda21/res_agenda21_36.shtml):

- promote and improve the quality of education: the aim is to refocus lifelong education on the acquisition of knowledge, skills and values needed by citizens to improve their quality of life;
- reorient the curricula: from pre-school to university, education must be rethought and reformed to be a vehicle of knowledge, thought patterns and values needed to build a sustainable world;
- raise public awareness of the concept of sustainable development: this will make it possible to develop enlightened, active and responsible citizenship locally, nationally and internationally; and
- train the workforce: continuing technical and vocational education of directors and workers, particularly those in trade and industry, will be enriched to enable them to adopt sustainable modes of production and consumption.

Although there appears widespread consensus about these goals, there is less agreement about the meaning of ESD. Just as is the case with sustainable development, there is not one single correct interpretation and use of ESD. ESD is argued to be seen as the total sum of diverse ways to arrive at a ‘learning society’ in which people learn from and with one another and collectively become more capable of withstanding setbacks and dealing with sustainability-induced insecurity, complexity and risks. From this point of view, ESD is about - through education and learning - engaging people in SD issues, developing their capacities to give meaning to SD and to contribute to its development and utilizing the diversity represented by all people.
In order to bring the ESD into the attention of governments and the public, the United Nations has declared a *Decade of Education for Sustainable Development (DESD)*. Resolution 57/254 on the DESD (2005–2014) was adopted by the United Nations General Assembly in December 2002, shortly after the World Summit on Sustainable Development (Rio+10) which was held in Johannesburg in August/September of the same year. The basic vision of the Decade is of a world in which everyone has the opportunity to benefit from education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation. DESD seeks to promote the meaningful development and implementation of ESD on all geographical scales (locally, nationally, regionally and internationally) with the involvement of a wide range of stakeholders. At the start of the Decade, this vision was translated into four objectives: 1) facilitate networking, linkages, exchange and interaction among stakeholders in ESD; 2) foster an increased quality of teaching and learning in ESD; 3) help countries progress towards and attain the Millennium Development Goals; and 4) provide countries with new opportunities to incorporate ESD into education reform efforts.

Current project addresses all the four goals of DESD, but specifically the goal of networking, linkages and learning among education centres in Europe in ESD, fostering the increased quality of teaching and learning in ESD and sharing experiences and knowledge of teaching of ESD.
Daniela Tillbury (2007), Director of International Research Institute in Sustainability (IRIS), suggests that sustainability is about challenging our mental models, policies and practices and not just about accommodating new dimensions into current work or finding common ground between related existing programmes. She holds that learning based change for sustainability challenges educators to think beyond raising awareness and go beyond involving learners merely in one-off activities such as cleaning-up or planting trees. Though these are useful and beneficial activities, what is essential is to encourage learners to develop critical and systemic thinking skills, enabling them to get to the core of the issues. This reflects the major shift in thinking from environmental education (EE) to education for sustainability or ESD (Tillbury, 2007).

In terms of curricula content, EE can be whole part of ESD, or have significant overlaps with ESD, but EE is insufficient to replace ESD as it lacks the socio-cultural and economic dimensions (see Methodology, next chapter). Conceptually, ESD also contains important pedagogical elements which are somewhat harder to capture with our current research, and which includes social learning, participation and capacity-building. On top of these, some countries are moving away from the anthropocentric (or human-centred) perspective towards eco-centric interpretation of sustainable development through references to living in harmony with nature and the rights of other species and the non-human world.

It is clear from the above that ESD is not just a matter of information, but is setting the ground for a gradual change, a learning-based change. This comes from the perspective that dominant current models of development appear unable to balance the needs of the people and the plant in the pursuit of peace and prosperity. SD is mainly portrayed through three dimensions and their interrelation in time (past-present-future) and in space (near-far) (see Figure 2).

Sustainable social development (people) is aimed at the development of people and their social organization, in which the realization of social cohesion, equity, justice and wellbeing plays an important role.

A sustainable environmental development (planetary boundaries) refers to the development of natural ecosystems in ways that maintain the carrying capacity of the Earth and respect the non-human world.
Sustainable socio-economic development (prosperity) focuses on the development of the socio-economic infrastructure, in which the efficient management of natural and human resources is important. It is the finding of balanced ways to integrate these dimensions in everyday living and working that poses, perhaps, the greatest challenge of our time as this requires alternative ways of thinking, valuing and acting.

In brief, in the SD context it is important to consider the environmental and socio-economic development in cross generational (i.e. intergenerational) perspective.

According to the DESD Monitoring and Evaluation document by UNESCO (2009), ESD would be focused on development of knowledge, capacities, qualities or competences required for active, critical and meaningful contribution to sustainable development, on the transfer of appropriate sets of knowledge, attitudes, values and behaviour. The report states:

- “ESD must be seen as a comprehensive package for quality education and learning within which key issues such as poverty reduction, sustainable livelihoods, climate change, gender equality, corporate social responsibility and protection of indigenous cultures, to name a few, are found.“
- “ESD supports five fundamental types of learning to provide quality education and foster sustainable human development – learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society.”
- “ESD is a learning process (or approach to teaching) based on the ideals and principles that underlie sustainability and is concerned with all levels and types of education.” *(UNESCO, 2009, p.26., Box 3)*

However, ESD still remains debatable around the world. It is now understood that more room will be left for localization and contextualization, and national and regional debates towards the development of the meaning are seen as crucial. Further to that, the current study aims at identifying the cognitive and skills and values elements of sustainable development in the national curricula in 8 countries included in the ENjoinED initiative (Bosnia and Herzegovina, Croatia, Estonia, Georgia, Kosovo, Macedonia, Romania and Slovenia).

1.4. ESD in the Republic of Macedonia

The terms Sustainability and Sustainable Development are often heard in discussions, debates, round tables whenever changes, development and reforms are being discussed, in education, but in other areas, as well. In the last ten years it is used to refer to the future sustainability of the activities and their positive outcomes achieved today, taken to improve current situation in the society.
The term Sustainable Development is very much in fashion and it is being frequently used by education professionals and politicians alike referring to education and development. The recent example of the term used in a public statement made by one of the former ministers of education, illustrates how it is considered appropriate and trendy to be used in any context related to education. Namely the former education minister on the topic of the top priorities for the newly appointed minister says: "It has to be invested in improving teaching cadre, from bigger salaries, training, to much more, since they are very important for sustainable development of education".

There are several topics dominating the education debate in Macedonia. Inter-ethnic integration, computerization, decentralization, religious education, are some of the most discussed topics at present. Conversely, Sustainable Development is on the margins of the interest of both education professionals and policy makers. It does not have the necessary public attention or the institutional will to push for its incorporation in the education system as a very important principle that needs to be integrated in the existing curricula from the very early age throughout the compulsory schooling. Thus (E)SD is not included in the major policy documents or in the legislation regulating education.


The last Framework Curriculum for Primary Education was adopted in 2007 and there is no clear evidence that SD was considered while it was being developed. There is no explicit mentioning of SD, or clear statement of sustainable development as a principle. However re-reading the principles and the aims, with SD in mind, leads to their implicit underlying meaning that refers to SD.

In the Law on Primary Education, adopted in 2008, ESD is not mentioned. The Law does not include a separate section on the principles, however among the goals of the primary education there are references to tolerance, respect for differences, basic human rights and freedoms, acting creatively in social and natural environment and taking responsibility for personal health and protection of environment.

Nevertheless, it is highly encouraging that the term Sustainable Development is found repeatedly in the curricula of individual subjects, especially natural sciences, like Biology, Nature etc. There is an elective subject that can be chosen by pupils in the

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1 From daily newspaper Dnevnik, August 3, 2011, journalist Milena Atanasovska Manasljeva
2 Law on Primary Education, Official Gazette of RM no.103, 19.08.2008
7th, 8th or 9th grade, Environmental Education, covering ESD from cognitive contents through skills and values to futures thinking, which is a small but a very important step in the right direction, making pupils aware of the importance of acting responsibly and providing value framework that might influence their decisions on environmental issues.

Furthermore, Life-Skills Based education, introduced as a compulsory subject in all three periods of primary school, and in secondary school, for class community hours, encompass theme “Me and Environment” teaching students from their early school age about environment and their personal care and responsibility towards it.

There are two policy documents adopted by the Government in 2010 that could have had ESD as one of the leading principles. However, the policy makers mention it implicitly:

1. **Strategy toward Integrated Education in the Republic of Macedonia, 2010**
   - does not mention ESD, but makes many references to some of its cognitive contents and values, mostly in respect to differences, understanding of others, learning the language of the other, “tolerance, intercultural communication and understanding in all aspects of teaching process”.

   - makes reference to education in section 3.6 Social Issues – unemployment – “there is a need to remodel higher education policy, with special reference to sustainable development dimension”.

There is a clear need for a public campaign to raise awareness of the importance of ESD and the necessity to incorporate it in the policy documents and embed the sustainable development concept in the education system as well as insert it in the agenda of both education professionals and policy makers.

### 1.5. Macedonian Educational System Structure

The school year at primary and secondary schools runs from the beginning of September until second week of June, for most pupils. Pupils attend school from Monday to Friday. With the decentralization in education, primary and secondary schools are the responsibility of municipalities. Costs for the public primary and secondary schools are covered by the Government.

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3. **Strategy towards Integrated Education in the Republic of Macedonia, 2010**
Currently, the structure of the Macedonian education system is as follows:

- **Pre-school education (kindergartens):** age 0-6, not compulsory;
- **Primary education (nine years divided in 3 periods):** age 6 to 14, compulsory;
- **Secondary education (three / four years):** age 15 to 18 / 19 compulsory;
- **Higher education, not compulsory.**

**Pre-school education** is not compulsory, though highly desirable and useful for intellectual, emotional, physical and social development of children. It is organized in public and private kindergartens for children age 0-6 divided in groups: 0-2, 2-3, 3-4, 4-6 years old. Teaching and learning in all age groups is organized around the Early Learning and Development Standards for Children 0-6 years.

“*The cornerstone of any society is its educational system because it helps produce open-minded adults capable of building a vibrant country*” – UNICEF, 2009

**Primary education** lasts for nine years and it is compulsory. Language of instruction is Macedonian, Albanian, Turkish and Serbian. It is provided in primary schools and applies to children from six through fourteen years of age. Primary schools enroll children who turn six by the end of December in the school year of enrollment. Nine years of primary education is divided in three distinctive developmental periods: I-III, IV-VI and VII-IX grade. The new concept marks a shift in the approach to teaching and learning process towards creative thinking and problem solving, experiential and process learning.

*The first period*, grade I-III, deals with “pre-operational level of thinking transfers towards the system of real operations” … “the pupils have enough time to systemize their experience and knowledge and acquire new knowledge. … They should be allowed to learn from their experience, to handle objects, use symbols, ask questions, search for answers and compare their findings with those of other children.” FC, p.15

*The second period*, grade IV-VI age 9-11, “guide’s’ the development of thinking process of the pupils towards the stage where they can visualize operations, anticipate results, use systems of classifications.” FC, p.16

*The third phase*, grade VII-IX age 11-14, “The pupils …reach conclusions on the basis of deductive thinking, give explanations, interpretations and develop hypothesis …

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5 A Concept for Nine-Year Primary Education in the Republic of Macedonia, 2007
They use methods of determining cause and effect relations, as well as hypothetical and deductive statements such as 'if...then'. FC, p.16

**Secondary education** is compulsory since 2008. It is offered in public and private secondary schools. Language of instruction is Macedonian, Albanian, Turkish and English in private schools. Secondary schools are divided into Secondary Grammar Schools (*Gymnasiums*), and Secondary Vocational Schools (VET with a three- or four-year curriculum). The interest among students is greater for the gymnasiums and for the four-year VET schools than for the three-year VET schools.

The pupils make their choice among these schools upon enrollment. They can transfer to a different type of curriculum or school in the upper classes under the strict conditions and if they pass differential exams. There are three types of Graduation exam: State Matura, granting Diploma, for pupils from both gymnasiums and four year VET schools that want to continue their education at universities; School Matura granting Certificate for completed secondary education, for pupils from gymnasiums; Final Exam, granting Certificate for completed secondary education, for pupils from four year VET schools.

**Higher Education** is not compulsory. It is offered in four public universities with dispersed programs throughout the country and a number of private accredited universities. Language of instruction is Macedonian, Albanian and English. Upon graduation from the secondary school pupils make their choice of the higher education institution and program based on their interest, scores from the State Matura exam and financial means.

### 1.6. Laws and policy documents that norm the system

The education system in the Republic of Macedonia is normed by a set of legislative and policy documents adopted by either the Parliament or the Government. The following documents regulate the education system:

A Concept for Nine-Year Primary Education in the Republic of Macedonia, adopted by the Government in 2007, introduced the new structure of the primary education and the new approach to teaching and learning process, setting the pupil’s experiential learning in the center of the education system. It is a very general document setting the basic principles, goals, outcomes and the general framework of the primary education system. While setting the general parameters of the teaching process it provides substantial freedom to teachers in teaching and ways to achieve the outcomes. It introduces three distinctive development periods in the primary education cycle. It also introduces Life-Based Skills Education as a compulsory subject and Environmental Education as an elective subject, both in line with the principles of Education for Sustainable Development.

The Law on Primary Education was adopted in 2008, by the Parliament. It gives the legal framework to the Concept for Nine-Year Primary Education, and puts it into effect. The Law is very prescriptive on the normative side. But it follows the Concept in the general approach prescribing the basic outlines leaving implementation freedom to teachers and schools. It does not include principles or outcomes, only goals. In some of its goals principles of ESD can be identified.

Both documents draw from The National Programme for the Development of Education 2005-2015, adopted by the Parliament in 2006. This policy document sets the general guidelines for educational development and insists on the promotion of cultural identity in a multicultural context. One of the goals and tasks given to education in 2005-2015 is the development of the individual “getting to know, understand and respect other cultures at national and international level”.

The current Law on Secondary Education was adopted by the Parliament in 1995 with a number of additions to it to follow the major directions adopted in the primary education. The major changes include compulsory secondary education, Matura exam, computerization of schools, school evaluation, decentralized school governance. ESD principles can be identified in some of its goals.

2. Methodology of research

The aim of the research was to collect and analyze the existing content most directly relevant to sustainable development in the national curriculums of the participating countries. The research methodology was designed by the Central Research Team (CRT) of the project to be as straightforward and efficient as possible for the country teams to gather as well as to analyze such complex data, and to aid the CRT in
comparative analyses of the findings. The method involved three separate phases (A, B and C) that aimed to restrain and circumscribe the scope of research from the most abstract educational documents (framework curriculum) to the “grass root”, to what exactly is delivered to the children in the classroom (the textbooks).

All three phases used the ESD Content list (Annex 1), categorization as well as specially designed matrixes for each phase.

**ESD Content list** - there are two major groups of SD content elements that make up the content list: *cognitive content* and *skills and values*. The *cognitive content* was organized on three categories: social cultural elements (human rights, peace and human security, gender equality, etc.), environmental elements (natural resources, water, soil, air, energy, etc.), economic elements (poverty, planetary boundaries, market economy, corporate and social responsibility and accountability, etc.). *Skills and values* group contains items like: acting with responsibility locally and globally, acting with respect to others, critical reflective thinking, applying learning in a variety of life-wide contents, etc.

All elements of the content lists had *codes* assigned and *descriptions* that added coherence and unity for the analysis process in all participating countries, while at the same time permitted a quantitative approach along with the qualitative one.

**Categories** - the research also used for analyses five categories: Environment affects Humanity (EH), Humanity affects Environment (HE), Individuals affect Environment (IE), Sustainable Development Values (V), Other (O). The five categories aim to show if the curriculums have an orientation, a vision.

**Phase A** of the research aims to scan the framework curriculum to reveal the SD content and its distribution in six curricular areas, by going through the document(s) and recording in the matrix all occurrences of ESD content according to the Content list as well as categorizing it according to the Categories.

The given *curricular areas* were reorganized (for coherence across countries) as follows:

Area A – natural sciences, physical environment and technology
Area B – social sciences, socio-economic development, history and economics
Area C – values and ethics education, citizenship education, religious education and philosophy
Area D – arts, humanities and languages (communication)
Area E – mathematics
Area F – physical and health education
Phase B of the research analyzed the subject curricula. In order to focus the research two most loaded curricular areas based on Phase A were selected: one according to cognitive content and one according to skills and values content. Once the curriculum areas were selected country researchers in consultation with CRT selected subjects again by the criteria of SD loaded at certain grade levels (max 6 subjects) for deeper analyses.

Based on the analysis of the FC and findings of phase A, in phase B the following subjects were selected by the country research team:

1. Nature (grade 4),
2. Biology (grade 7-9),
3. Knowing the Nature (grade 1, 2 & 3),
4. Society (grade 4 & 5),
5. Civic Education (grade 8) and
6. English language (grade 4, 5-8).

The steps from Phase A were then repeated on the selected subject curricula the SD content from the Content list was recorded into predesigned matrixes and categorized according to categories.

Phase C of the research analyzed textbooks and it was conducted in two steps. Step 1 of these phase aims to select the three textbooks whose content was to be analyzed. This is based on Phase B of the research and includes the following criteria:
1. The most content loaded subject + grade combination. This was based on the highest number of content elements and skills and values elements.
2. The most 'IE only' loaded subject + grade combination. This was based on the highest number of category IE (individuals affect environment).
3. The most 'IE alone or with other categories combination' loaded subject + grade combination. This was based on the highest number of IE (individuals affect environment) in combination with other category.

The rationale behind this selection procedure was to increase the focus on the framing of the content, as denoted by the Categories. The primary drive behind the selection of textbooks was not to perform an evaluation of such a limited sample, but to provide internationally comparable examples of good practice in interweaving different aspects of education for sustainable development into a coherent narrative delivered to students. Also, relationship between the curricular proscriptions (indicated both in the framework curricula and the specific subject curricula) and the content, tasks and illustrations directly presented to students was to be mapped.

In Phase C, from the list of subjects analyzed in phase B, the country research team selected textbooks for the following subjects:
1. Society for Grade 4, Biljana Zivkovik, published by the Ministry of Education;
2. Nature for Grade 4, Biljana Krtolica, Violeta Mitovska, Olivera Velickovska, published by the Ministry of Education; and
3. Civic Education for Grade 8, Gordana Trajkova Kostovska, Ksenofon Ugrinovski, Krste Vasileski.

These textbooks for the subjects selected on content quantity basis, were selected as recent publications (2009 -2011) and as the most commonly used for these subjects in Macedonian schools.

The second step of phase C had a matrix which asked the researcher to analyze content, illustrations and tasks from each textbook selected.

**Research limitations.** We must draw attention to some limitations of the present research, which are inherent to social empirical studies. This is an international initiative, deployed in eight countries with different linguistic, cultural, historical and social context. Each county had a team formed by an educational partner and an environmental partner. A dose of subjectivity in analyzing the curriculum is present, due to so many researchers involved. The central research team anticipated this and it is the reason for introducing codes. However it is not possible to assure that all coding is totally uniform and standardized. The central research team tried to keep subjectivity at a minimum by describing accurately all SD elements and discussing in depth with country teams every aspect of tasks. The present report is the written analysis of all three phases, as they are in our country.

3. **Introduction to analyses**

3.1. **The path towards ESD as a path towards a durable future**

Although the fascination with future and potential developmental paths is well known, at least since it became possible to record fears, wants and states (and thus also to repeatedly transmit them to future generations), contemporary scientific and social global institutions warn that the humanity is collectively facing an unprecedented challenge, at least as important as the coming of the Stone or Agricultural Ages, or the beginning of the Industrial Revolution (Glasser, 2007). The current predicament is at least in part fraught with problems which cannot be resolved using the existing dominant ways of acting and living, but require a step out of the standard
conceptualization of our material, living and social environments and their role in the socio-economic processes (Tillbury, 2007).

Though this is a broad socio-cultural task, broader than any formal curriculum can hope to encompass, on the conceptual level it requires an inclusion of questioning of the existing mental models, mostly successfully reproduced through formal education, which have consigned most contemporary societies to the path of unsustainable development. Alongside inquisitive reconsideration of how we act, this also includes a better understanding and questioning of the social expectations and prejudices that influence individual action. The required change is deeper than a curricular intervention, based on educational processes and learning. The perceived threat is big and every community should address it through responses based on planned and all-encompassing learning and understanding. Education needs to be restructured into education for sustainable development, which is more than reducing the lack of knowledge. It is adoption of an attitude and development of motivation to act based on the stimuli from the immediate environment and independent formulation of own interests and attitudes.

One of the current and future tasks of education is to enable people to live together in ways that contribute to sustainable development of their communities and states. However at present education often contributes to unsustainable living because of the lack of opportunity for learners to question their own lifestyles and the systems that promote those lifestyles, because it advocates reproduction of unsustainable models and practices. A reorientation of formal educational content towards sustainable development is thus recommended. More concretely, that includes helping students understand what sustainable development requires globally and locally and also to help them understand how to use their own capacity for critical reflection and systemic and futures thinking, as well as to motivate them to consider actions towards sustainable development.

3.2. ESD and the national curriculum

The most common global response to the calls for inclusion of ESD into formal education is to make adjustments (minor or substantial) to the existing educational system, with all its imperfections and peculiarities. This is achieved either as an expansion of the existing inclusion of environmental education topics (thus their importance in our methodology and the results; see section 2 and 4) or adoption of altogether new cross-curricular and interdisciplinary teaching and learning. It is especially interesting that at the global level (UNESCO, 2009) few countries report the support of ESD in early childhood education, which is something we have investigated in greater detail from both the side of skills and values development (see section 4.2)
and the cognitive content introduction (see section 4.1), through analysis of curricula from the beginning of compulsory schooling. It is often the case that ESD themes are seen as too complex and suitable only for later stages of education, rather than being seen as mostly a matter of presentation of the existing curricular content.

All additions to the national framework curricula, such as sustainable development topics, need to be added to an already fully packed curriculum, which in the formal compulsory education has explicit task of teaching the basics of reading, writing and arithmetic. That was the reason to start the analyses with mapping of the content that already exists in the national curricula (both framework and subject curricula), either explicitly referring or related to sustainable development. In the cases where the contents are related to sustainable development they can be slightly modified to contribute to education for sustainable development (ESD) without introducing additional content to the curriculum. It is therefore of utmost importance that the sustainable development content can be seen as “an integrative, cross-curricular theme that can bring together many of the single issues that schools are already expected to address” (UNESCO, 2009, p.48).

As is expected from the 2009 Review of Contexts and Structures for ESD (UNESCO, 2009) most of the ESD-content was found in those curricular segments where environmental education content can traditionally be found: in natural sciences. It was in this segment of the national framework curriculum that most content was identified in all the participating countries. It was especially interesting for us to determine the extent to which the generally-applicable learning goals (part of our Skills and Values Content elements – SV), such as acting with respect for others, acting with responsibility globally and locally, critical thinking, understanding complexity, futures thinking, understanding interdisciplinary relations, ability to identify and clarify values (see section 4.2), are represented across the national framework and selected subject curricula. Some of these learning outcomes can be seen as instrumental (for example, acting with responsibility, futures thinking or understanding interdisciplinary relations), whilst others are more emancipatory (e.g. critical and reflexive thinking, participating in consensus building and democratic decision making, decision-making in uncertain situations). As Review of Contexts and Structures for ESD reports these differences may reflect the historical and political context of individual countries, but through explicitly presenting its role and position in the curriculum we hope to open a public debate about its importance for sustainable development.
3.3. What we teach and how we teach it

In that light, and building on from the methodological and historical foundation of ESD in the curricular environmental education, we also sought to map how curricular content presents the interaction between individuals, humanity and their bio-physical environment (see section 4.1.1.1). We thus report on the overall findings of this type of framing of the curricular content. We have sought to map whether the segments of the curriculum state that some aspect of a natural system affects or impacts people, or that humanity is dependent on some aspect of the Earth or environment; that the actions or decisions of society influence or change the Earth and environment, for better or for worse; or that the actions or decisions of individuals, in their private capacity, influence or change the Earth and environment, for better or for worse (Kastens and Turin, 2006). The latter is especially important for its emancipator aspect in combination with development of certain skills and values. The analysis has sought after mapping and reporting on the content from selected textbooks on how they reflect and represented these curricular recommendations. In regards to overall national and selected subject curricula, it was expected that the analysis will show the prevalence of different framings of perceived interaction between individuals, communities and the environment.

Following the Review of Contexts and Structures analysis and recommendations it was sought to map both the environmental as well as developmental, disaster prevention and corporate and social responsibility ESD content themes. As is the general global trend it is most often the case that the traditional environmental elements (natural resource management, health, water and importance of biodiversity) are more represented than the social, cultural and economic aspects of development. In the case of Macedonia topics such as peace, citizenship, ethics, equality, and cultural diversity are relatively more emphasized. It is important to note that globally two SD focal areas emerge (a) a focus on understanding the causes and impacts of key issues and their mutual interconnections, and (b) focus on capacity development for addressing the key issues at individual, communal and global level (UNESCO, 2009).

The analysis tries to shed some light on two aspects by looking in greater detail into both the subjects that were expected to contain most cognitive environmental, economic and socio-cultural content (CC) and those subject that were expected to contain most ‘skills and values’ content (SV). Each will be presented in greater detail below. It is important to note that approach focuses on the more conventional presentation of the ESD content, through integration of the ESD and SD issues in the existing school subjects, rather than through innovative methods such as ‘adopting a whole school’ approach to ESD. Though latter is important, it does not have a potential to reach as wide a number of students as the former, and remains an open
topic for further analyses and project development. Moreover, interventions in the formal national curriculum lead to more urgent and readily adoptable responses, which is one of the important first steps towards orienting educational practice in the direction of sustainable development.

4. Overview of country findings

The Framework Curriculum6 (FC) for the primary education in the Republic of Macedonia is a general policy document outlining the principles, aims, curriculum and extra-curricular activities and expected learning outcomes. It is prescriptive document adopted by the Ministry of Education and Science to be used in the formal education system. Individual subjects’ curricula closely follow the outlines given in the Framework Curriculum. They list the topics and contents for each of the topics proscribing objectives, activities and methods to be used. They are also highly prescriptive and all schools are obliged to follow them making the formal education uniformed for all pupils in the Republic of Macedonia. Textbooks for the individual subjects have to be approved by the Ministry. Based on the quality of the textbooks the Ministry approves more than one textbook, usually two or three. Schools chose the textbooks that will be used by teachers and pupils.

In line with the expectations made based on the 2009 Review of Contexts and Structures for ESD (UNESCO, 2009) most of the ESD-content in the Macedonia national curricula was found in the area of natural sciences, physical environment and technology where environmental education content is traditionally found. And the least ESD-content was found in the area of values and ethics education, citizenship education, religious education and philosophy. The ratio between the area of natural sciences and the area of values and ethics education is 2 to 1, meaning SD content in

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6 A Concept for Nine-Year Primary Education in the Republic of Macedonia (2007)
the area of natural sciences is double as compared to the area of values and ethics education SD content. It is notable that in the area of values and ethics education - covering values and ethics, in citizenship and religious education and philosophy, some of which were introduced in the education system of the country in the last decades (e.g. religions, citizenship), that SD content is found in the Framework Curriculum, and it is not present in the individual subjects. It should be noted here that ESD content is found in elective subjects like: Ethics, Introduction to Religions, Conflict Resolution Skills, Learning the Language of the Neighbour, Environmental Education, Health Program, Classical Culture in European Civilization (FC p. 23) and in extra-curricular activities (FC p. 33-35).

This reflects both historical and political context of Macedonia. Historically the curriculum is knowledge based, treating environment and ecology issues from the “knowledge about” aspect which can be seen both in the framework curriculum and individual subjects’ aims and objectives. The verbs commonly used in the objectives are: acquiring, learning, teaching, developing competencies and skills, informing. Verbs encouraging creativity and critical thinking are used less frequently. It should also be noted that the statements used in the curricula, in aims, objectives and the content, are written in a not very straightforward way and sometimes it is difficult to get the full meaning, especially for people not very familiar with education system and the terminology used in curricula. That may cause some misunderstanding while reading the examples given in the report, but that is cultural difference drawn from the past.

In the Framework Curriculum adopted in 2007, analyzed in the course of this research, ESD is interwoven in the FC section II - Principles in the Primary Education (e.g. principle of inclusion, democracy and right of choice; principle of understanding of others, respect of individual differences, creating a favorable climate). ESD is also very visible in the FC section III – Goals of Primary Education.

In FC Section XIII - Expected Outcomes - ESD is found in most of the stated outcomes. They correspond clearly to ESD learning outcomes as defined in the Review of Contexts and Structures for ESD.

The presence of ESD elements in these general guidelines, goals and expected learning outcomes of the formal education in policy documents displays clearly that education authorities are aware of the importance of including ESD in the formal education starting from the early age. However their willingness to incorporate ESD elements in formal education is not very well translated in curricula of individual subjects. This shows that incorporating ESD in formal education of Macedonia was done from the

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7 A Concept for Nine-Year Primary Education in the Republic of Macedonia (2007)
8 Review of Contexts and Structures for ESD, (Wals for UNESCO, 2009)
top, on the policy level, with less attention paid to actual teaching and learning process.

Based on the analysis of the FC and findings of phase A, the following subjects were selected in phase B: Nature (grade 4), Biology (grade 7-9), Knowing the Nature (grade 1, 2 & 3), Society (grade 4 & 5), Civic Education (grade 8) and English language (grade 4, 5-8). The analysis of selected subjects shows that elements of environmental content are present most in subjects – Nature and Biology. These contents mostly imply that environment affects humanity and/or humanity affecting environment. Elements of socio cultural content are present most in all remaining subjects analyzed. Elements of economic content are found at a much lower rate in subjects Society and Civic Education.

Most of the identified content elements clearly refer to SD but it is very difficult to categorize them. In some socio –cultural content elements it is implied that individuals affect environment. On the other hand, content providing framework that might influence pupils’ decisions on environmental issues is found at a very low rate. It is interesting to note that traditional environmental education content elements like natural resources, water, air, soil and energy, human rights, cultural diversity and poverty are most frequently present in the subjects that were analyzed. These findings are logical taken into account that most of these topics traditionally are taught in Macedonian education system. In Phase C from the list of subjects analyzed in phase B the research team selected textbooks for the following subjects: Society (grade 4), Nature (grade 4) and Civic Education (grade 8). The textbook Nature (grade 4) is accompanied with a workbook. These textbooks were selected as most commonly used for the subjects selected on content quantity basis.

The textbook Nature (grade 4) is accompanied with a workbook. These textbooks were selected as most commonly used for the subjects selected on content quantity basis.

Analyzed text books follow closely the subject curriculum, covering content area and topics listed in the respective curriculum. The ratio text - illustrations and the language used in the textbooks are age appropriate. They are all recent publications (2009-2011), and follow the guidelines for writing textbooks adopted by the Ministry. The number of tasks included in each of the analyzed textbooks is close to the number of school hours allocated to the respective subject. The majority of tasks encourage learners to actively process the information and support understanding of its meaning. There is not one dominant category to which illustrations fall. They are diversified among all five categories. However it can be noted that the number of descriptive pictures (drawings, photos) prevails over tables, charts and maps.

Having in mind the complexity of Macedonia society, its multi ethnic and multi cultural composition ESD socio-cultural content elements like cultural diversity, equity, ethics, peace, coexistence, conflict prevention, understanding “the other”, is traditionally present. What is clearly missing in the Framework Curricula, individual
subject curricula and textbooks are contents related to social responsibilities of public and private companies, and overall broader representation of economical elements of ESD.

### 4.1. The analysis of the SD cognitive content

In the national curricula of the Republic of Macedonia, both framework and subject curricula, there are no ESD cognitive content elements that are specifically excluded from the curriculum text, and all of them can be seen represented at least in some minor way. Economic elements of ESD are underrepresented considering their importance. General global biophysical conditions are also underrepresented. Combining these two we may conclude that interaction between humanity and the environment in terms of sustenance and social activities affecting non-human environment could be more clearly represented.

In the curriculum environmental elements dominate closely followed by socio-cultural elements, whereas economic elements are significantly less present. In the natural sciences environmental elements prevail, especially those related to complex aspects of interaction between humanity and environment, such as: biodiversity, natural phenomenon and changes in the living organisms, year’s seasons and human beings activities, changes of nature due to urbanization, interdependence through food, human beings as living organisms, human beings and environment. Socio-cultural elements are dominated by cultural diversity and health topics such as: stereotypes, respect for differences, cultural heritage, religious differences, healthy food, hygiene. Sustainable development from the group of economic elements is the most common content found in different subject areas.

The area of natural sciences, physical environment and technology related subjects: Knowing Environment, Nature, Natural sciences, Natural Sciences and Technology and Biology analyzed for the purpose of this research, predominantly deals with environmental issues including natural resources and the notion of their expendability. They also have contents specifically dealing with food production, water, air, soil and ecology as a separate curriculum topic (grade 4, 5, 6, 9). In these environmental content elements sustainable development as economic element is included as “creating conditions for sustainability and sustainable development of diverse living organisms on Earth” (Biology, grade 7, age 12). Agriculture is also a separate topic, which is logical having in mind that for Macedonia agriculture is a very important branch of its economy. Socio-cultural elements identified the area of natural sciences are contents related to health, with specific emphasis on hygiene (personal and public) and healthy nutrition, cultural diversity specific to our multicultural country and to some extent human rights with emphasis on children’s rights “to get acquainted with basic children rights and institutions and services protecting these
It has to be noted here that this subject taught at a very early age (in grade 1, 2 & 3, age 6, 7 & 8) combines natural and social aspects of the environment and integrated content with environmental and socio-cultural elements was found.

The areas of social sciences, values and ethics education and physical education are dominated by socio-cultural cognitive elements with intercultural diversity understanding and health related contents as more widely present. Other contents related to human/children rights, security, peace, equity and governance are represented but mixed with other SD contents “support and respect of human rights and liberties and living in a democratic society applying methods which support these values”, “developing awareness for their identity and responsibility for their deeds locally and globally” (FC, 2007, p.11).

The area of arts, humanities and languages and the area of mathematics are dominated by mixture of different cognitive content elements. In the area of arts, humanities and languages it is a mixture of economical and intercultural understanding related elements mostly linked to different types of communication “development of communication skills, critical thinking and creativity” (FC, 2007, p.11). In the area of mathematics it is a mixture of economical and environmental elements.

Overall, in the curriculum, subjects and textbooks, environmental aspect of ESD is more represented than the remaining two. Socio-cultural aspect of ESD is also highly represented, but compared to environmental elements at a slightly lower rate. Economic aspect of ESD is represented much less than the previous two. Environmental aspects are broadly represented, whereas socio-cultural aspect is dominated by intercultural understanding and health.

Though the focus of the environmental content is in the area of natural sciences it was found in other areas as well. Topics such as: urbanization, pollution, habitat of humans, humans as part of biosphere and human beings as living organisms are found in social sciences, natural resources are found in the area of social sciences and in the area of values and ethics education (Society grade 4 & 5 and Civic Education grade 8) both in the subject curricula and textbooks. In the Curriculum we find some of these topics also in the area of mathematics and in the area of physical and health education (Mathematics, grade 1-8, Chemistry and Physics, grade 8 and Physical and Health Education, grade 1-8).
Although the cross-curricular nature of ESD seems balanced, especially with environmental elements represented in different subject area, taking into account the other two aspects, that is clearly not the case. ESD contents are separated into disciplines and segmented in elements represented at very different rates.

This may lead pupils to see issues that are related in nature as segregated and grouped into specific human activities which could lead to segmental corrections, piece by piece, which is in clear opposition to the threat posed by global environmental change and its holistic and global character affecting every individual and human and non human life alike.

This imbalance calls for more integrative ESD topics that would lead pupils see “the big picture”, interdependence and interaction of different SD elements in global terms. Consequently they can act responsibly, holistically and take actions in synergy with efforts made on global level or initiate activities that correct issues related in nature globally.

### Examples of integrative ESD topics in subject curricula:

- “describe possibilities for sustainable development of local community and ideas how to prevent pollution of local environment” (Grade 8, Biology curriculum, p. 17)
- “to understand ecological and social characteristics of animal communities and their connections with other non human communities and their influence on biosphere” (Biology curriculum, grade 7, p. 4)
- “every child has the right to play in good and healthy environment and responsibility to keep it clean and protect” (textbook Society, grade 4, p. 16)
- “healthy food for healthy life, stop for pollution” (English language curriculum, grade 5, p. 87)
- “take care of personal health and surrounding environment” (Knowing Environment curriculum, grade 2, p. 3).

### 4.1.1.1. Framing of environmental aspects

The environmental elements, mentioned above, mostly are framed as either explaining how environment affects humanity (EH), or how humanity affects the environment (HE) or both (EH/HE). There is about an equal measure of the environment affects humanity and humanity affects environment in environmental contents. There is less content dealing with individual effects on the environment (IE) in the curricular segments focused on environmental topics, but there is much more in social sciences and citizenship education which is then to some extent connected to the environmental health topics. In the textbooks environmental content elements are framed at an equal level as humanity affecting environment, environment affecting humanity and individuals affecting environment.

Socio-cultural elements in the curriculum of social sciences are more framed as individuals affecting environment, whereas in civic education and in languages, they
are framed as other, meaning that they clearly refer to SD but do not fall into specific categories.

Economic elements wherever found are framed as other, not falling into specific categories. Socio cultural elements in the textbooks are framed as individuals affecting environment or humanity affecting environment to a much lower extent. Economic elements in the textbooks are framed as other, meaning that they cannot be categorized in specified categories. Very few content elements from all three aspects of ESD identified in the curriculum and textbooks can be framed as sustainable development values providing framework that might influence pupils’ decisions on environmental issues.

However one clear example of economic element – sustainable development, framed as sustainable development value, is found in the textbook Society (grade 4, p.56-59) in the topic Problems in My Settlement.

4.1.2. Economic aspects representation in curriculum

The economic aspects of ESD analyzed for the purpose of this research focus on the mechanisms of consumption and production of goods required for everyday life and poverty. They are represented most while social and ethical issues related to production and consumption and shared responsibility for global economic development are rarely mentioned. Most of the economic topics are found in the social sciences, i.e. Society, Knowing Environment, History, and to some extent in Civic Education and Languages. In these subjects they appear mostly combined with the socio-cultural and environmental topics, at equal measure.

However in the curriculum isolated cases were found that do not fall in the stated above. The first one is economic element (the only one identified) in natural sciences, planetary bounderies in Nature Curriculum (grade 4, p.11) “Know the consequences of rapid and slow changes on the Earth surface”. The second one is in the Society Curriculum (grade 4, p.10), where economic elements, market economy and production and/or consumption, are represented on their own, not combined with
other ESD aspects, “Get acquainted with the most important commercial and non-commercial activities in the local community”.

The ratio of economic elements represented in the curriculum to environmental or socio-cultural aspects, which are found at almost equal measure, is 1:5. This ratio clearly shows that economic elements, though very important, are heavily underrepresented. One of the reasons might be found in the fact that two of the economic elements that were being looked for, market economy and corporate and social responsibility are relatively new concepts in Macedonian society and they are entering the education system on cross curricula basis very slow, especially at the primary education level that was analyzed.

In the curricula most represented are economic elements poverty and production and consumption. Sustainable development, as economic cognitive element, is also found but at a lower rate. The other three remaining economic elements are represented at a very low rate. Still, the economic element – corporate social responsibility is the least represented. However an isolated case is found in Civic Education curriculum, grade 8, p.6 “understand and adopt behaviours that contribute to own good and welfare of others in terms of social responsibility”.

Economic aspects of ESD are combined with broad skills and values, mostly critical-reflective and complexity thinking. Exceptionally, sustainable development economic element found in Society grade 4 curriculum is combined with skills and values content – acting with responsibility locally and globally, which is a rare case, “understand the functions of human habitats and the need to take care of them locally and globally”.

As a result of low representation of economic elements in the curriculum their representation in the textbooks is lower compared to the other two ESD aspects. ESD economic elements are found in the textbook Society, grade 4, and Civic Education, grade 8. Poverty is represented with one paragraph; corporate social responsibility in three paragraphs dealing with behaviors of employees to contribute to own good and welfare of others. Economic cognitive element, planetary boundaries, is not represented in these textbooks.

Higher representation was found for sustainable development economic element in one lesson, “basic understanding of the problems in the community and need to resolve them and take care of habitats” (Society, grade 4, p.56-60); Economic element market economy, in both textbooks, in 2 lessons and 2 paragraphs respectfully- “basic information on commercial and non-commercial activities in the local community and environment” (Society, grade 4, p.71-73) and “role of media, commercialization and economy” (Civic Education, grade 8, p.67 and p.76); Economic element production
and/or consumption is represented in one lesson in Society textbook, and with five lessons in Civic Education textbook.

Underrepresentation of economic aspect of ESD with special emphasis on corporate social responsibility is an area with most room for improvement.

4.1.3. Socio-cultural aspect representation in curriculum

Socio-cultural aspects of ESD are well represented in the curriculum, both Framework Curriculum and subject curricula and in the textbooks. The analysis of findings from the three phases of the research shows almost equal representation of socio-cultural and environmental elements. In all three phases economic elements are underrepresented. Socio-cultural aspects of ESD are the most represented cognitive content in the second phase, analysis of selected individual subjects curricula, while environmental elements are the most represented cognitive content in the first and the third phase. Dominant representation of socio-cultural elements in the second phase can be partially explained by the subjects selected for analysis, from the areas of social sciences, values and ethics education and arts, humanities and languages that traditionally deal with general social and cultural contents.

The fact that socio-cultural elements are well represented somehow hides the structural imbalance. They are represented and distributed well in social sciences, in values and ethics education, with slight dominance of intercultural diversity/understanding and health. But in the arts, humanities and languages with communications section it is only intercultural diversity and cultural understanding that is actually included. This section of the curriculum seems as a fertile ground for a broad inclusion of the socio-cultural aspects, such as peace and human security, equality. This is a curricular area with substantial room for improvement.

Broader aspects of the above mentioned social-cultural elements such as human rights, equalities and human security could be incorporated into natural sciences and technology education, as well. In this way students would get a better insight into the connection between their own wellbeing and the material resource base, as well as cultural consequences of scientific progress and technological development.

There is no socio-cultural aspect of ESD from the given matrix that is unrepresented in the curriculum. As already mentioned, cultural diversity is the most represented overall among the socio-cultural ESD content. It is somewhat expanded on in the social science segments with human rights, gender equality and peace and human security especially in Society and Knowing Environment subjects. In Civic Education socio-cultural element -new forms of governance is represented in the majority of
topics combined with human rights and peace and security. One very interesting combination was found (human rights, peace and human security, gender equality and health) in Civic Education curriculum grade 8: “Build a positive attitude towards all rights and recognize them (civic, socio-economic, ecological, religious and cultural) and understand when to apply human rights and when international humanitarian law”.

It seems that broad area of Civic Education gives ground for more integrated ESD contents that will lead pupils towards thinking about and responding to the social and material aspects of global environmental change.

4.2 The analysis of skills and values

In the Framework Curriculum all the skills and values from the ESD matrix skills and values list are represented across curricular areas, varying from area to area. Though it is difficult to make generalizations, still, in the subject curricula, some patterns can be seen in skills and values representation which follow the nature of the subject area. Thus basic science skills, observing, measuring, inferring based on observation, classifying, predicting and understanding graphs and symbols, dominate natural sciences, while – acting with respect to others and acting with responsibility locally and globally and ability to identify and clarify values and participation in democratic decision-making dominate in Civic Education. In languages, critical reflective thinking, understanding complexity, futures thinking and applying learning in a variety of life-wide contents, are dominantly represented. In social sciences skills and values are broadly represented, whereas in mathematics education skills and values representation is limited to basic mathematical manipulation skills and some complexity thinking.
Skills and values are represented in groups with diverse combinations across the subject areas. Five major groups can be identified, though not all skills and values were represented in the analyzed documents. The five groups are the following:

1. Values of respect and responsibility: acting with responsibility globally and locally; and acting with respect to others.
2. Reflexivity and complexity understanding: critical and reflective thinking; understanding complexity/applying systemic thinking; understanding relationships across disciplines; and applying learning in a variety of life-wide contents.
3. Managing change and uncertainty: futures thinking; planning and managing change; decision-making, including in uncertain situations; and dealing with crises and risks.
4. Community cooperation: ability to identify and clarify values; identifying stakeholders and their interests; participating in democratic decision-making; and negotiating and consensus building.
5. Basic science skills: observing–qualitative; measuring–quantitative; inferring–based on observation; classifying; predicting; communication and understanding graphs and symbols; and manipulating mathematical ratios.

Analyzing representation of skills and values on the individual basis two of them stood out, critical reflective thinking as the most represented in all subject areas, whilst negotiating/consensus building as the least represented. The skills and values associated with complexity thinking, futures projections, change management and interdisciplinary learning take a significant role in natural and social sciences education, and somewhat less in the civic education and languages. Critical reflective thinking combined with understanding how things influence one another in complex systems mostly is found in natural and social sciences and to some extent in languages.

In order to illustrate skills and values contents and their diverse combinations across curriculum and how they are taught examples are taken from all three phases of the research focusing on the subjects selected in the phase three: Nature, Society and Civic Education. This is done to ease the comparison of the three phases and see how Framework Curriculum aims and objectives are translated into subject objectives and contents and finally how these objectives and contents are actually taught. This is also done to identify which area and/or level from the researched three levels need improvement.

The statements in the Framework Curriculum document are quite general. The aims given for each of the developmental periods combine diverse skills and values following the pattern of the grouping in line with the nature of the subject area.
The statements in the individual subject curricula are more specific but combinations of skills and values contents follow the grouping and the nature of the subject.

In the textbooks contents were found directly and indirectly linked to the objectives and contents stated above. In spite of the expectations that there will be further elaborations that would complement and widen the contents stated in the curricula towards sustainability and future thinking, that was not the case.

In the selected textbooks more descriptive and task oriented approach is used to cover identified curricula objectives and contents. The ratio rote versus process learning varies. In the Civic Education textbook process learning dominates, while in Nature textbook rote learning prevails with tasks for pupils to list, describe, answer, define and explain. In Society textbook process versus rote learning is represented at almost equal measure.

There is very little, if any, integrative cross curricula approach that would also combine skills and values contents leading pupils to think and adopt sustainable development values providing framework that might influence their decisions on environmental issues. It seems that in general terms of ESD, textbooks need improvement most.

4.3 Examples of good practice of ESD in education system of the Republic of Macedonia

ESD principles, well integrated and broadly represented, were identified in two subjects taught in Macedonian primary schools. Both were introduced in 2008, with A Concept for Nine Year Primary Education and both are very good examples of how
ESD should be incorporated in teaching and learning process and represented both on the level of the curriculum and on practical classroom level, in teachers manuals, textbooks and workbooks. These two subjects are the following:

- **Life Skills-Based Education (LSBE)** is a compulsory subject, covered at class community periods, in all three periods of the primary and in the secondary education. With UNICEF support, Bureau for Development in Education (BDE), responsible for the development of the curricula, developed LSBE curricula, Teachers’ Manuals and Workbook.

- **Environmental Education** is an elective subject that can be selected in the third period of primary education, 7th, 8th or 9th grade. BDE developed the curriculum for this subject and adapted the Green Pack, a multi-medium environmental education teaching kit, to teach pupils about environmental protection and sustainable development.

### Life Skills-Based Education

The drive towards empowering children to deal effectively in challenging situations established Life Skills-Based Education (LSBE) worldwide, either in community centers or in schools. In Macedonian education system it was introduced as a separate subject in public primary and secondary schools. The overall goal is “to contribute to personal, emotional and social development of pupils through helping the development of psycho-social skills enabling pupils to deal successfully with challenges of everyday life”.

LSBE is an interactive process of teaching and learning which enables pupils to acquire knowledge and to develop attitudes and skills which support the adoption of healthy behaviour and leads to qualities such as self-esteem, sociability and tolerance, to action competencies to take action and generate change, and to capabilities to have the freedom to decide what to do and who to be. (UNICEF)

Expected learning outcomes include a combination of knowledge, values, attitudes and skills with a particular emphasis on those skills that related to critical thinking and problem solving, decision-making and communication and inter-personal skills, negotiation, conflict resolution, coping, and self-management which can be applied to specific contexts such as health practices, peace building or environmental protection. The pupils are expected to develop greater self-awareness – including

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9 Primary education is organized in three developmental periods: I- grade 1-3, II –grade 4-6, and III- grade 7-9. For more details see section Structure of the Macedonian Educational System p.11 in this report.
11 LSBE curriculum, grade I-III, p.2
awareness of rights, influences, values, attitudes, strengths and weaknesses – and thus, an improved ability to make informed choices in life.

In all three periods of the primary education, five program themes are covered, defined at different levels (recognition and description, naming, listing and comparing, to comprehending and taking position and attitude), depending on the pupils age with different objectives and outcomes for each:

1. Me – Personal Development;
2. Me and You – Interpersonal Relationships;
3. Me and Others – Social Relations;
4. Me and Health – Living Healthy; and

The 5th theme was analyzed for the purpose of this research. There are four topics in this theme: Behaving safely in the environment; Developing positive attitude towards environment; Developing positive attitude towards plants and animals; and Protection of the Planet Earth.

All four topics are covered holistically. Each topic covers elements from all three cognitive aspects, environmental, socio-cultural and economic, combining values of community cooperation, respect and responsibility, basic science skills, skills to reflexive thinking and complexity understanding, managing change and uncertainty to thinking about future. At the end of the topic pupils are lead to reflect on the activities, what they have learnt and how they can use this knowledge in everyday life.

The pupils can see that things do not happen separately, in isolation, but they are interrelated. They are not affected only individually or locally, but globally as well. The actions today have consequences not only today and tomorrow but in future, on future generations.
As illustration for the above statements the topic “Protection of the Planet Earth”\textsuperscript{13} is selected. The curriculum states the topic as a general content area, listing the objectives and the expected outcomes. The Teacher Manual\textsuperscript{14} and the Pupil Workbook\textsuperscript{15} present three workshops for this topic:

1. (D)Evolution - on different eco systems and living creatures in them;
2. What is Different – on interdependence of natural resources and living creatures, pollution of the air, water, soil (the Earth compared to the Moon);
3. Vilena – New Planet- organizing life on the new planet, production of food, energy, water supply, usage of plastic, waste management, how, why, what. In each of the three workshops the activities are interactive. Process learning strategies are used. There is no rote learning.

Pupils are taking active roles (of different species, organizations, representatives, consumers, producers, policy and decision makers), asking questions, looking for answers or probable solutions, consequences, giving suggestions for resolutions. These activities make pupils aware of the importance of environmental protection, of local and global eco systems, of personal and social responsibility towards other human beings and other living creatures and environment. They prepare them to be actively involved and take action and be agents of sustainable development on local and global level.

This subject, as it is foreseen in the Framework Curriculum and in LSBE curriculum and in the Teachers’ Manuals and Pupils’ Workbooks, gives a very good example how sustainable development should be treated in other subject areas. Holistic approach is needed to develop a value framework that will influence pupils’ decisions on environmental issues. All three cognitive elements, which are of equal importance for sustainability, should be incorporated in a balanced way providing sustainable development values through combinations of cognitive contents and diverse skills and values.

\textbf{Environmental Education - Green Pack}

Environmental Education is an elective subject, introduced in 2008, which pupils may select to take in the third period of the primary education, in 7\textsuperscript{th}, 8\textsuperscript{th} or 9\textsuperscript{th} grade. The objective of introducing this subject was to develop in pupils “scientific understanding of the necessity of sustainable development of environment, inter-related connection of all live and non-living biosphere components as precondition for its balance and sustenance and to develop responsible behavior towards nature and its protection”\textsuperscript{16}.

\begin{itemize}
  \item[13] LSBE Curriculum, grade 7-9
  \item[14] LSBE Manual, grade 7-9
  \item[15] LSBE Workbook, grade 7-9
  \item[16] Environmental Education Curriculum, p.3
\end{itemize}
Environmental Education has eight basic ecological themes, four of which, as a minimum, should be selected jointly by pupils and teacher to be covered as research activities in the school or wider school environment. BDE developed the curriculum for this subject. The Teacher Manual and Workbook were not developed, since they decided to adapt and adopt the Green Pack as the teaching aid for this subject.

The Green Pack is an interactive multimedia toolkit developed by the Regional Environmental Center for Central and Eastern Europe (REC), currently adapted and used in 14 mostly European countries. Its adaptation in Macedonian and Albanian language was financially supported by Austrian Development Agency and it was distributed to all primary schools.

It covers topics on development and the environment, each presented in a carefully-crafted environmental, economic and social context. The materials stress the formation of new values and establishment of new behavioural models at school, at home and in society. This encourages pupils and teachers to take a proactive approach to the environmental challenges.

The teachers' manual is the main component of the multimedia toolkit. It contains lesson plans on 22 environmental topics, including information specific to the Republic of Macedonia, structured to provide users with information on each theme as well as the lesson’s objectives and methodology.

The toolkit presents the challenge of sustainability in a compelling and accessible way. Pupils follow lesson plans that come with videos, exercises, interactive dilemma games and augmenting information from a CD-ROM. It involves process learning in all topics.

The Green Pack includes 22 topics divided in five chapters:

1. **Environmental Components:** air, water, soil and biodiversity;
2. **Threats to the Environment:** urbanization, noise, waste and chemicals;
3. **Human Activities and Impacts:** energy, transport, industry, agriculture, forestry and tourism;
4. **Global Challenges:** climate change, ozone depletion, acidification, and issues affecting seas and oceans;
5. **Values:** ethics and values related to consumerism, human health and the environment, citizens’ rights, and responsibility for the Earth’s future.

In Environmental Education the themes are the following:

1. Water in Sustainable Development of the Community;
2. Soil in Sustainable Development of the Community;
3. Conditions for living and growing of plants;
4. Cultivation of flora communities;
5. Survival of animals in environment;
6. Endangered animals;
7. Saving natural resources;
8. Preparing ecological wall newsletter and an ecological event.
5. Conclusions and recommendations

Education for Sustainable Development is a fairly new concept in the Republic of Macedonia. Nevertheless, Sustainable Development is incorporated in the education system at different levels and to a different extent. Its principles were identified in all studied curricular areas with varied frequency of occurrence.

ESD is incorporated in formal education from the top, on the policy level, with less attention paid to actual teaching and learning process. It is identified more in the framework curriculum and subject curricula than in the textbooks and workbooks. The presence of ESD elements in the framework curriculum shows that education authorities are aware of the importance of including ESD in the formal education from the very beginning. However their willingness to incorporate ESD elements in formal education, as seen in the framework curriculum and subject curricula in the goals, objectives and expected outcomes, is not reflected well in the textbooks of individual subjects.

In the textbooks there is very little integrative cross curricula approach that would also combine skills and values contents leading pupils to adopt sustainable development values that would provide framework which might influence their decisions on environmental issues. It seems that in general terms of ESD, textbooks need improvement most.

None of the studied curricula areas addresses all three aspects (environmental, socio cultural and economic) of ESD in a balanced manner. ESD contents are separated into disciplines and segmented in elements represented at very different rates. This may lead pupils to see issues related in nature, as segregated, and grouped into specific human activities, which, in turn, could lead to corrections piece by piece. This kind of segmental corrections is in clear opposition to the threat posed by global environmental change and its holistic and global character affecting every individual and human and non-human life alike.

Most of the ESD content was found in natural sciences, physical environment and technology where environmental education content is traditionally positioned. These contents mostly imply that environment affects humanity and/or humanity affects environment, leaving out the individual affecting environment, which is closer to the pupils’ perception. The least ESD content was found in the area of values and ethics education, civic and religious education and philosophy.
On the other hand, socio-cultural ESD elements are well represented and distributed in social sciences, in values and ethics education, with slight dominance of intercultural diversity/understanding and health. Socio-cultural content elements like cultural diversity, equity, ethics, peace, coexistence, conflict prevention, understanding “the other” are traditionally present reflecting the complexity of Macedonian society, its multi ethnic and multi-cultural composition. What is clearly missing in the Framework Curricula, individual subject curricula and textbooks are contents related to social responsibilities of public and private companies, and overall broader representation of economical elements of ESD.

Economic aspects of SD are the least represented in the curriculum. The ratio of economic elements represented in the curriculum to environmental or socio-cultural aspects, which are found at almost equal measure, is 1:5. This ratio clearly shows that economic elements, though very important, are heavily underrepresented. Underrepresentation of economic aspect of ESD with special emphasis on corporate social responsibility is an area with most room for improvement.

Overall there is more skills and values content than cognitive content in all curricular areas except in natural sciences. Analyzing representation of skills and values on the individual basis two of them stood out, critical reflective thinking as the most represented in all subject areas, whilst negotiating/consensus building as missing.

Critical reflective thinking combined with understanding how things influence one another in complex systems is found in natural and social sciences. Basic science skills (observing, measuring, inferring, classifying, predicting) are present in natural sciences. Skills and values group describing managing change and uncertainty (futures thinking, planning and managing change, decision-making including in uncertain situations, dealing with crises and risks) is the least present in the curriculum out of all skills and values groups.

Very few content elements from all three aspects of ESD and skills and values aspect identified in the curriculum and textbooks can be framed as sustainable development values providing framework that might influence pupils’ decisions on environmental issues.

5.1 Recommendations

In line with the above conclusions based on the findings it is recommended that effective strategies and mechanisms are introduced to incorporate ESD holistically in the education system of the Republic of Macedonia on three levels. Specifically:
1. On policy level:
   - Public campaign organized to raise awareness and draw public attention to the importance of including ESD in the agenda of policy makers and educational professionals.
   - The relevant legal and policy documents amended adding sustainable development as a very important principle of the education at all levels.

2. On Curriculum level:
   - Framework Curriculum and Subject Curricula revised to incorporate sustainable development in the goals and objectives more explicitly across all curricular areas.
   - Subject Curricula across all curricular areas revised to incorporate more cognitive contents from all three aspects of ESD including combination of skills and values in a balanced and holistic way in order to develop a value framework that will influence pupils’ decisions on environmental issues.
   - More integrative cross curriculum ESD topics introduced that would lead pupils see “the big picture”, interdependence and interaction of different SD elements in global terms so that they can take actions in synergy with efforts made on global level or initiate activities that correct issues globally.
   - Economic elements broadly represented across all curricular areas. Contents on social responsibilities of public and private companies combined with global biophysical conditions clearly represented to lead pupils see the interaction between humanity and the environment in terms of sustainability of non-human environment affected by social activities.
   - More integrated ESD contents in the broad area of Civic Education that will lead pupils towards thinking about and responding to the social and material aspects of global environmental change.
   - Socio-cultural aspects such as peace, human security and equality more broadly included in arts, humanities and languages. Broader aspects of the social-cultural elements such as human rights, equalities and human security could be incorporated into natural sciences and technology education, as well. In this way students would get a better insight into the connection between their own wellbeing and the material resource base, as well as cultural consequences of scientific progress and technological development.
3. On textbook level recommendations for curriculum level apply with addition to the following:

- Integrative cross curricula approach combining all three aspects of ESD and diverse skills and values contents leading pupils to adopt sustainable development values incorporated in textbooks and workbooks.
- Broader contents advancing values and future thinking incorporated in the textbooks.
- More task oriented approach used to cover identified curricula objectives and contents.
- Process learning more represented than rote learning.
- Examples of good practices as seen in the Life Based Skills Education and Environmental Education used broadly in textbooks and workbooks.
References

BRO, Concept for Nine-Year Primary Education in the Republic of Macedonia A (2007), Bureau for Development of Education.


Krtolica, B., Mitovska, V., Velichkovska, O., Priroda za IV oddelenie, Ministerstvo za obrazovanje i nauka.


Trajkovska-Kostovska, G., Ugrinovski, K., Vasileski, K., Gragjansko obrazovanie za VIII oddelenie.


Zakon za osnovno obrazovanie, Sluzben vesnik na Republika Makedonija, br.103, 2008.

Annex 1 - ESD CONTENT LIST

Below is a list of content elements that will help you map and extract curricular content related to ESD. For ease of use the list is divided into several sections, primarily into **Cognitive content** (knowledge, facts, learning) and **Skills and Values** (skill development, competences; understanding, acquiring and sharing values).

<table>
<thead>
<tr>
<th>I</th>
<th>COGNITIVE CONTENT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td><strong>Social Cultural elements</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Human rights</td>
<td>Civil and political rights, economic; social and cultural rights; environmental rights (right for clean environment) is currently debated</td>
</tr>
<tr>
<td>2</td>
<td>Peace and human security</td>
<td>References to benefits and mechanisms of global peace, and securing &quot;freedom from want&quot; and &quot;freedom from fear&quot; for all persons.</td>
</tr>
<tr>
<td>3</td>
<td>Gender equality</td>
<td>In employment, career and salary; in political and social rights</td>
</tr>
<tr>
<td>4</td>
<td>Cultural diversity and intercultural understanding</td>
<td>Tolerance to other values and perceptions</td>
</tr>
<tr>
<td>5</td>
<td>Health</td>
<td>Human health, health problems, environmental health, ageing</td>
</tr>
<tr>
<td>6</td>
<td>New forms of governance</td>
<td>New ways to manage governing of goods and communities, e.g. environmental governance (environmental aspects considered in decision making); democratic decision making (transparent, involving stakeholders).</td>
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</table>

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<thead>
<tr>
<th>I</th>
<th>COGNITIVE CONTENT</th>
<th>Description</th>
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<tr>
<td><strong>B</strong></td>
<td><strong>Environmental elements</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Natural resources</td>
<td>Minerals, forest, land, soil etc (amount, location, quality)</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>Fresh water, marine water, drinking water (location, quality)</td>
</tr>
<tr>
<td>3</td>
<td>Air</td>
<td>Ambient air (quality)</td>
</tr>
<tr>
<td>4</td>
<td>Soil</td>
<td>Agricultural soil, forest soil (quality); soil erosion processes</td>
</tr>
<tr>
<td>5</td>
<td>Energy</td>
<td>Fossil fuel-based energy, renewable energy (resources, dependence on these sources)</td>
</tr>
<tr>
<td>6</td>
<td>Agriculture</td>
<td>Role of agriculture (food, employment); position of agriculture within a wider economics system; forms of agriculture (industrial, small scale, organic, sustainable etc.)</td>
</tr>
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</table>
## I COGNITIVE CONTENT

### Environmental elements

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<tr>
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<th>Description</th>
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</table>
| 7 | Biodiversity  
Species and habitats (ecosystems) - diversity, quality, loss |
| 8 | Climate change  
Global phenomenon; reasons and actions (mitigation, adaptation) |
| 9 | Rural development  
Villages, communities - role, age ratio, employment; position within wider society, economic base |
| 10 | Urbanization (urban footprint; urban sprawl)  
Cities/towns - size, population, dynamics, city planning, inc transport planning; impact on the landscape and wider environment; quality of life |
| 11 | Natural disasters  
e.g. floods, droughts, volcano eruptions, tsunamis, extreme weather events |
| 12 | Pollution  
Air pollution, water pollution, soil pollution; chemical, biological, physical; systemic or accidental |
| 13 | Human beings (as living organisms)  
Anatomy and physiology of human being as a living organism; human being as a one of the living organisms in ecosystem/biosphere |
| 14 | Waste  
Solid waste, liquid waste, waste management; recycling |

### Economic elements

<table>
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<tr>
<th></th>
<th>Description</th>
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</table>
| 1 | Poverty  
Population living below average living standards; sanitation problems, food shortage, health care deficiency, availability of education; relation to natural resources and economics |
| 2 | Planetary boundaries  
Planet Earth has limited resources for human consumption and emission mitigation (or absorption back into biological cycle). |
| 3 | Corporate social responsibility and accountability  
Companies work out and implement certain plans on responsible resource use, a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere. |
| 4 | Market economy  
An economic model; its role in today’s global society |
| 5 | Production and/or consumption  
Elements of contemporary market economy, role of companies, role of customers; cultural effects, environmental effects, examples from students’ everyday life. |
| 6 | Sustainability, sustainable development  
Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. |
### II SKILLS AND VALUES CONTENT

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Acting with responsibility locally and globally</td>
</tr>
<tr>
<td>2</td>
<td>Acting with respect to others</td>
</tr>
<tr>
<td></td>
<td>In this case ‘others’ may include other people, other communities (anthropocentric) or other beings (biocentric).</td>
</tr>
<tr>
<td>3</td>
<td>Critical reflective thinking</td>
</tr>
<tr>
<td>4</td>
<td>Understanding complexity / applying systemic thinking</td>
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<tr>
<td></td>
<td>Understanding how things influence one another within a whole, for example in ecosystems where air, water, movement, plants and animals combine to a complex effect.</td>
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<tr>
<td>5</td>
<td>Futures thinking</td>
</tr>
<tr>
<td></td>
<td>Developing reasoning about possible, probable and preferable futures, understanding worldviews and myths that underlie them. Most clearly evident in projecting from study of history into what is likely to continue, what is likely to change and what is entirely novel. Based on spotting patterns in past and present.</td>
</tr>
<tr>
<td>6</td>
<td>Planning and managing change</td>
</tr>
<tr>
<td>7</td>
<td>Understanding interrelationships across disciplines</td>
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<tr>
<td></td>
<td>Being taught how topics and processes from different scientific and artistic disciplines and subjects overlap, how individual issues may be viewed from several disciplines, e.g. physics and economics.</td>
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<tr>
<td>8</td>
<td>Applying learning in a variety of life-wide contents</td>
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<tr>
<td></td>
<td>Being instructed in how to apply the curricular knowledge in everyday life, but also basic pedagogic instructions how to learn from everyday situations (trial and error heuristic).</td>
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<tr>
<td>9</td>
<td>Decision-making, including in uncertain situations</td>
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<td></td>
<td>Being taught about the process of decision making, individually, within groups and whole societies. Developing a skill of decision making in situations where there is no predetermined right outcome.</td>
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<td>10</td>
<td>Dealing with crisis and risks</td>
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<td></td>
<td>Learning about responses to crises and about assessing various risks in the environment. Training in managing one’s own response to crises.</td>
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<tr>
<td>11</td>
<td>Ability to identify and clarify values</td>
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<tr>
<td></td>
<td>Developing skills in clarifying one’s own and others’ values, as well as identifying values that lie behind attitudes and statements.</td>
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<tr>
<td>12</td>
<td>Identifying stakeholders and their interests</td>
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<tr>
<td></td>
<td>Being able to discern who stands behind certain statements and attitudes and what their interests might be. Also being able to observe an issue from the multiple perspectives of different stakeholders and their interests in it.</td>
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<tr>
<td>13</td>
<td>Participation in democratic decision-making</td>
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<tr>
<td></td>
<td>Access to information, participation in decision making (on plans and permits), access to justice</td>
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<tr>
<td>14</td>
<td>Negotiating and consensus building</td>
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<tr>
<td></td>
<td>Resolving conflicts (for example)</td>
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<tr>
<td>II</td>
<td>SKILLS AND VALUES CONTENT</td>
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<td>----</td>
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<tr>
<td>15</td>
<td>Observing - qualitative</td>
</tr>
<tr>
<td>16</td>
<td>Measuring - quantitative</td>
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<tr>
<td>17</td>
<td>Inferring - based on observation</td>
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<tr>
<td>18</td>
<td>Classifying</td>
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<tr>
<td>19</td>
<td>Predicting</td>
</tr>
<tr>
<td>20</td>
<td>Communication and understanding graphs and symbols</td>
</tr>
<tr>
<td>21</td>
<td>Manipulating mathematical ratios</td>
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</tbody>
</table>
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Coordinator of the Initiative:
Network of Education Policy Centers (NEPC)

Location:
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