

Fostering Integration of Education for Sustainable Development into the Educational Practice

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DOI: 10.56177/red.9.2023.art.7

Abstract

This paper aims to identify the proper means of integration of education for sustainable education (ESD) into the educational practice of all areas, since an early age. ESD is considered a catalyst for transforming individuals and society, offering values and competences that will contribute to building a sustainable future. The first part of the paper presents the concept and a brief history of ESD, while the second part introduces an original set of entry points needed in instructional practice of any subject to lead to a sustainability-oriented education. This set of best practices is to be used by teachers in their routine educational practice and has the potential to produce transformative shifts into the present pupils and future adults. The results may increase the literacy on sustainable development making the teaching process more oriented on sustainability goals. The findings of this paper may accelerate the desired behavioural change needed to progress building a sustainable future.

Keywords: education for sustainable development, quality education, sustainability literacy.

JEL Classification: I20, I29.

1. Introduction

Modern humans have been documented to inhabit the Earth for about 200,000 years. From migrant hunting-gatherers and farming settlers of the past to professions offered by scientific and

technological advancements of present, from living in harmony with the nature to pollution, pandemics, and climate change all involved and must include education as a preparation for the future. The current difficult problems can be tackled by individuals who know how to face the challenges and education plays an essential role in this attempt.

But instruction must also mean education for sustainable development (ESD), an approach that empowers students to make decisions for responsible consumption of resources, support for a just and economically viable society and respect for the environment for present and future (Ssossé, Wagner, & Hopper, 2021). The transformation must begin in education institutions (schools, colleges, universities, centres offering lifelong learning), where educators across the world must change their manner of teaching to determine a transformative societal shift of children, youth, and adults. The essential role of teachers and the value of their qualities are unanimously acknowledged (Hattie, 2003; Gavriluță & Apetrăcheoae, 2023), but they need to be able and willing to integrate sustainability in their teaching. Consequently, this research aims to identify the proper means to integrate the three dimensions of sustainable development into all educational facets to be used by teachers in their instructional practice to obtain an authentic literacy for sustainability for the pupils since an early age.

2. Literature Review

ESD is the catalyst for transforming individuals and society as a whole, being responsible for values and competences that will lead to sustainable and inclusive growth in a fair and peaceful climate (Momete & Momete, 2022a). This can be achieved by incorporating the principles of sustainable development into the educational practice of teachers of all disciplines. In such a way, through a sustainability-oriented education, students will become agents of transforming society into a sustainable one through knowledge, values, skills, and attitudes that will contribute to building a sustainable future. This research aims to identify ways of change so that we can talk about authentic sustainability literacy. This literacy can make a difference by developing the skills, attitudes, competences, and values needed “for surviving and thriving in the declining conditions of the world in ways which mitigate that decline as far as possible” (Stibbe, 2009).

United Nations (UN) adopted in 2025 the “2030 Agenda”, which aims to redirect society on a sustainable path by defining 17 goals that describe the main challenges for humanity and aim to

achieve a prosperous and equitable life, in peace and security for all, now and in the future (United Nations, (UN) 2015). Among the Sustainable Development Goals (SDGs) contained in the “2030 Agenda”, education is addressed in a stand-alone goal (SDG 4 – quality education), while also mediating the achievement of other 16 SDGs.

Sustainable development is a very complex approach where all SDGs must be thought in synergy. Therefore, the actual system must suffer a synergic transformation through a framework which rests on national and policies and plans, industry-specific planning, tax reforms and engagements from finance institutions, investments, partnerships policy-society, accountability of governments and all the involved stakeholders (Miranda & Scholz, 2023). This can be achieved by infusion of ESD into the educational systems, but this infusion must pass beyond the symbolism and offer the learners the actual tools to understand, articulate and act on all sides of sustainability.

ESD is a holistic and transformative education aimed at new learning contents, new pedagogical approaches, and new learning environments. Thus, education systems must respond to the need to redefine learning objectives and relevant contents, introduce pedagogical approaches that empower students to incorporate sustainability principles (UNESCO, 2017). ESD aims to develop competences that support students to contribute to promoting societal change (Uitto & Saloranta, 2017).

The concern for ESD arose from society's need to respond to societal progress which, however, is decoupled from sustainable development. The need for education and knowledge to develop sustainable alternatives and take concrete actions to preserve the environment is recognized worldwide (UNESCO, 2020). ESD is recognized as the main action to achieve all SDGs, aiming to transform the whole of society (United Nations (UN), 2017a).

Following the ESD initiatives of 2005-2014 (United Nations (UN), 2017b) and 2015- 2019 (UNESCO, 2016) UNESCO has adopted the "2030 Agenda", the program for the development of sustainable education until 2030 to reorient and reinforce education in the process of promoting sustainable development. Within the concerns present in the "2030 Agenda", emphasis is placed on inclusive and quality education, focusing on the responsibility with which the future of society is viewed. An overview of the most important moments of EDS history is shown in **Figure 1**.

ESD presents many multifaced challenges for all involved stakeholders, from educators to policy makers, from adults to children. Pedagogical approaches and curriculum the schools are follow must adapt to support the transformation of our society into a more sustainable one and the educators must be trained to integrate ESD in their current practice. Moreover, the teachers need to be enthusiastic about this integration, therefore they need to be motivated to perform an authentic mind set change for their learners. It is of utmost importance that this change occurs since early age, in schools (UNESCO, 2022).

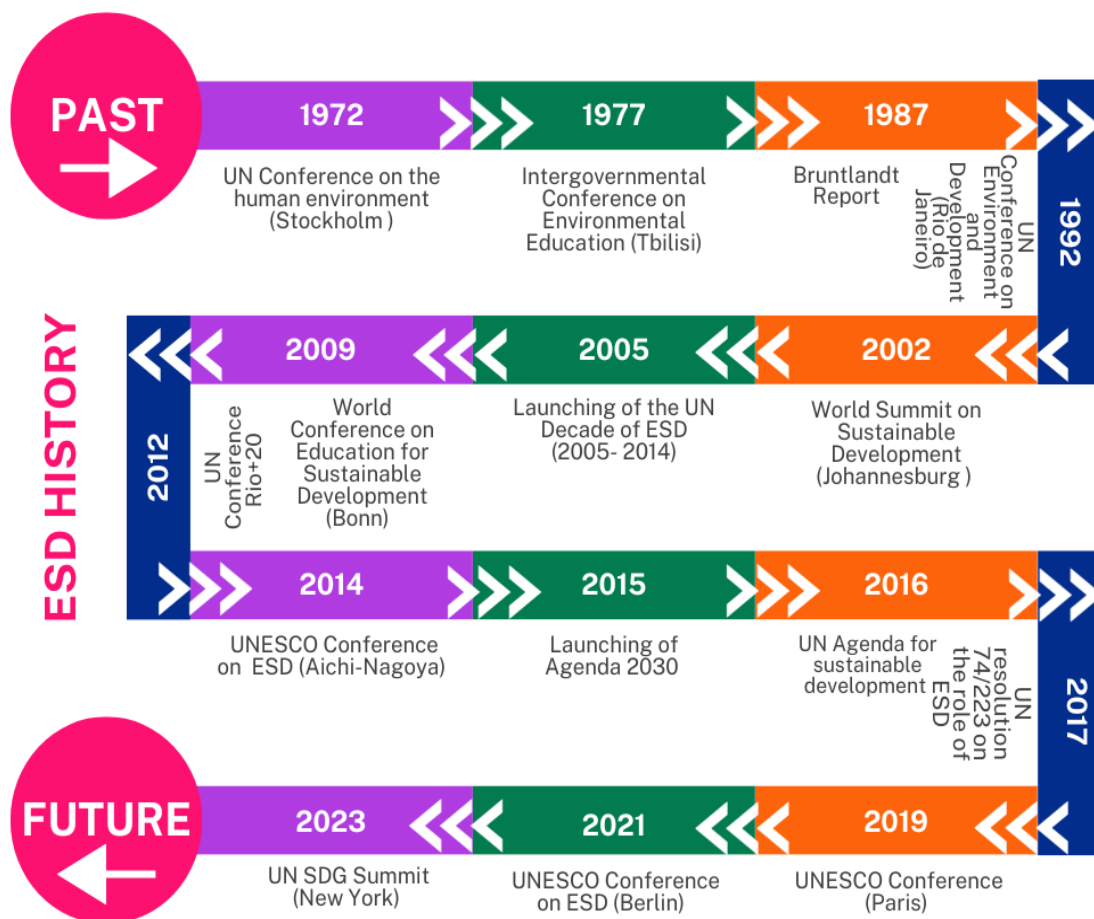


Figure 1. Important moments for ESD history.

Source: realized by the authors using Canva based on (Momete, 2022b) and (Miranda & Scholz, 2023).

One important challenge of implementing ESD is how education systems need to adapt to help pupils/students/learners gain literacy for sustainability and involve phyco-social factors (Chen et al, 2022). Another significant challenge refers to the actual incorporation of ESD in the

traditional teaching systems, in which subjects are taught in many distinct disciplines. This paper addresses these challenges by tackling the psychological level of the literacy for sustainability and by introducing a set of entry points valid for all topics.

3. Methodology and research steps

The aim of ESD is to integrate the three dimensions of sustainable development into all educational facets. The main aim of this research has in view the identification of the proper entry points into the educational practice which must be used by all teachers to obtain a literacy for sustainability for their pupils. In such a way, the educational process all teachers implement in their lessons must contain main topics related to sustainable development dimensions. In view of this desideratum, this research introduces an original concept that may integrate ESD in the teaching activity of teachers from lower secondary education and is based on the incorporation of all dimensions of ESD in educational practice.

This paper addresses the deepest level of the literacy for sustainability which is psychological as pupils must be aware of the outcomes of their actions on the web of our interconnected society since an early age. However, the incorporation of ESD in the traditional way of teaching, where topics are divided in a disciplinary framework, is challenging. Therefore, the main entry points which teachers from lower secondary education may use in any subject taught are identified, on the three dimensions of sustainable development: economic, social, and environmental.

The original conceptual representation used in this paper has in view the modelling of the ability of a teacher to help his/her students develop competences for sustainable development and is based on authors' views on what can be clearly tackled by any willing teacher in the classroom. Sustainable development has three dimensions – economic, social, and environmental; each dimension can be addressed through many entry points to be used by all teachers in their lessons, regardless of the discipline.

The original concept involves the following steps:

- Step 1: critical analysis and reflection upon what can be tackled with clarity by each teacher, regardless of their discipline, on their daily practice, on the three dimensions of the sustainable development.

- Step 2: identifying the best set of entry points, designed on the three dimensions of the sustainable development (economic, social, environmental). The best set of entry points aims to consider only what is relevant, understandable, and easily implemented in the daily practice.
- Step 3: designing the framework for the development of empathy, solidarity, and mobilization (ESM) on a 3×3 matrix of main entry points.
- Step 4: assessing the relevance and main potential results of applying the ESM set.

4. Results and discussions

After a thorough analysis of what can be performed within the material and time constraints of each discipline, based on authors' view, three entry points for each dimension of the sustainable development are selected, which we find to be relevant, understandable, and easy to implement. In terms of ESD, all areas of education involve socio-emotional and behavioural learning. The prosperity of the future society depends on the competencies related to solidarity, empathy, and mobilization & action-taking and these are considered for the chosen entry points. Each entry point is selected after considering the complexity of each dimension and by analysing the most sensitive aspects of our society. At the same time, each entry point represents the essence of a given challenge and we tried to cover these challenges by a proper selection of an adequate number of entry points into the instructional practice. By reaching these entry points, the pupils may acquire a deeper insight into sustainability meaning in everyday life, potentially leading to a behavioural change (Momete, 2022b). The essential aspects of EDS to be covered during teaching by any teacher are rendered in **Figure 2**, on each dimension of sustainable development, all having the potential of offering a foundation for the development of empathy, solidarity, and mobilization (ESM).

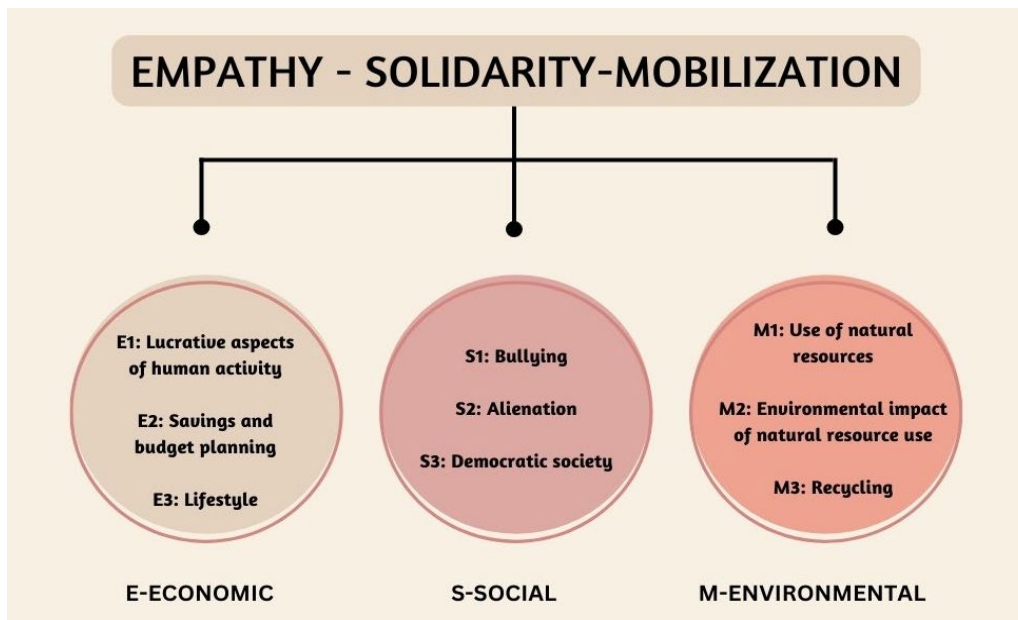


Figure 2. ESM 3×3 set of main entry points to be used by all teachers in their lessons, on the three dimensions of sustainable development.

Source: authors' elaboration on Canva based on authors' own view.

The ESM concept implies the incorporating into teaching of nine entry points, three on each dimension (E1-E3, S1-S3 and M1-M3) by which the teacher can better explain, discuss, present, analyse, and interact specifically with the learners, regardless of whether she/he teaches English or Math or Technology, for instance. The use of the ESM matrix of 3×3 main entry points throughout the school year to better to explain or analyse specific topics belonging to each discipline may increase the literacy on sustainable development making the teaching process more oriented on sustainability goals.

The consistent incorporation of these entry points throughout the whole school year will lead to positive outcomes on all the dimensions of sustainable development and may induce potential key transformative shifts in pupils, which are presented in **Figure 3**. The inclusion into teaching of the economic (E) dimension, through its E1-E3 entry points, has the potential to lead to an increased awareness about the meaning of every day economic activities and their impact on personal life and wellbeing. This may inflict a smooth transition towards safety and rationality in consumption, as informed pupils may become responsible adults. The addition into teaching of the social (S) dimension, through its S1-S3 entry points, has the potential to rise understanding about the rights of others but also their own, promoting the importance of respect and the

potential acquiring of an ethical behaviour and an open mind towards a social justice. The enclosure into teaching of the environmental (M) dimension, through its M1-M3 entry points, has the potential to expand the knowledge of the impact of own actions on the environment and reduce the strain both on the demand and on the post-consumption sides. This will eventually lead to a new society, built on sustainable systems, which are economically, socially, and environmentally interconnected.

As mentioned before, this conceptual representation is aimed for the deepest level of the sustainability literacy, which is psychological. In our view, the psychological level can be assessed by teachers working with pupils being at operational stage, meaning above age 11 (Piaget, 1952). This means that educational practice must be fundamentally reformed starting with age 11-12, the age considered proper for discernment. This sustainability-oriented education may begin at the age of reasoning which is considered to start at 7 (Rogoff, Sellers, Pirro, Fox, & White, 1975), but the children of that age are still dichotomous (right or wrong, black or white), without subtlety thinking, without nuances, complexity and shades in between. That is why this research considers the original concept that integrates ESD in the teaching activity of teachers from lower secondary education (grades V-VIII).

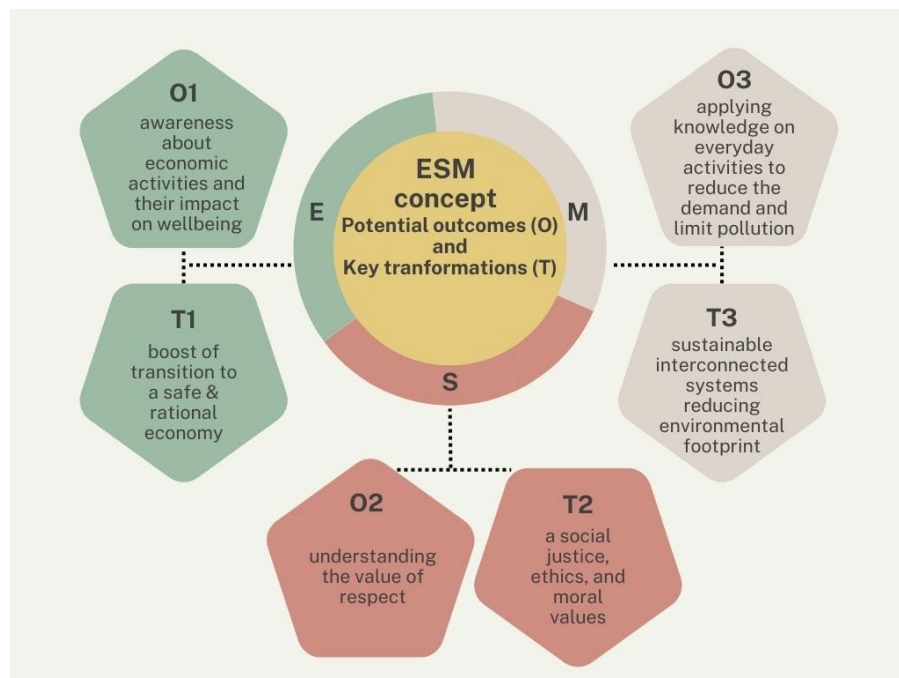


Figure 3. The key outcomes and potential transformations of the ESM original concept to be used in the teaching activity by all teachers.

Source: authors' elaboration on Canva based on authors' own view.

The main contributions of this research are:

- The identification of the main entry points which teachers may use in their teaching activity, organised on each dimension of sustainable development: economic (E1:E3), social (S1:S3) and environmental (M1:M3). By talking about lucrative aspects of human activity, by giving examples of saving and budget for a specific lifestyle, the teacher may better convey the economic dimension of the sustainable development to pupils. In the same manner, by instilling the values of democratic society, by explaining the manifestation of bullying and alienation, the teacher would act as a transformative agent for the children in the classroom. Moreover, by incorporating the scarcity of resources and the impact on the environment of human activities in their teaching, the teachers may apply her/her knowledge on relevant activities for sustainable development.
- The identification of the main outcomes of applying the identified main entry points which may lead to awareness, understanding and application of the knowledge on everyday activities of the children.
- The identification of the correlation of the main entry points with the actual potential key transformative shifts in pupils which may transform them into more responsible persons, which would more easily mobilised to safeguard the prosperity, not only for personal reasons, but also of the planet and people.

5. Conclusions

The present research aimed to uncover the main realistic actions needed to be performed by all teachers in their lessons to accelerate the literacy on sustainability and incorporate ESD in their instructional practice. The study identified the best set of practices to be implemented by all teachers in their routine instructional practice. The research rendered a complex picture of ESD and identified a matrix of 3×3 main entry points (on each dimension of sustainable development: economic: E1-E3, social: S1-S3 and environmental: M1-M3) which may convey well-grounded transformative shifts into pupils, starting from an early age. By speaking about the 3×3 set and giving relevant examples and thoughtful explanations throughout the entire teaching year, the teacher can hopefully instil the desired transformative shifts, potentially leading to a behavioural

change. In such a way the children would be mobilised to care more and to be more emphatic, and act in solidarity for a sustainable society.

The political will is one important key which may open the gate for a more sustainable society. Unfortunately, the lack of political will to radically change the path of the society leaves the burden in the classroom. Therefore, the teachers must be more involved in developing skills in the classroom which will ultimately lead to a society more responsive to the changing conditions. One limitation of this research refers to the selection of the most relevant entry points. We acknowledge that the 3×3 set selected is not a perfect one but can be easily understood and implemented by any teacher or pupil, without being overcrowded and being rationally selected to cover the essence of each dimension. Another limitation of this research, closely connected with the first one, is that the solution offered is not perfect and needs updating and expanding, keeping the pace with a world in change. We do not try to give the solution, but merely a starting point located in the classroom.

The present study is the first step of a larger research which will be continued with the assessment of the existing situation at the level of frequency of integration of sustainable development dimensions into the instructional process by teachers working in lower secondary education from Romania. This implies a survey having at the core the conceptual model introduced and explained here.

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