



**A whole school approach for  
sustainable development, with a  
particular focus on the role and  
competences of school leaders to  
support the implementation of it**

**2022**

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## INTRODUCTION

*This research paper - together with similar papers developed in parallel by other research teams on various subtopics - aims to offer a basis for policy development and implementation at different governance levels and inform the work of the European Commission (EC) on teachers and school leaders towards a sustainable whole school approach for quality and inclusive education in all European Union Member States. To do this, we bring together recent education research with inspiring practice and policy and the views of various education stakeholders.*

It has been developed by members of the European Education Policy Network (EEPN) project partnership, based on resources and examples identified by partnership members. The paper aims to offer a policy and research framework for the analysis of practical examples of inspiring practice, especially for policy transfer and policy learning.

The current paper, together with similar research carried out in interlinked fields related to teachers and school leaders towards a sustainable whole school approach for providing quality and inclusive education for all, feeds into the work of EEPN to formulate and promote policy recommendations in the field as well as to the future work of EEPN until the end of 2023. The primary aim of this work, starting with desk research, is to promote cooperation, policy development and implementation at different governance levels. It supports the European Commission's policy work to assist teachers and school leaders by providing research evidence and evidence-based policy recommendations for European, national, regional and local levels.

### Research question

When bringing together research, policy, and practice, we are aiming at offering an analysis of various approaches and frameworks in order to identify the role and competences of teachers and school leaders to support the implementation of a whole school approach for sustainable development, with a particular, bringing together policy examples, good practice and research evidence.

The research undertaken investigates successful holistic models in the field of ESD and in the broader sense of sustainability from the perspective of the role of teachers and school leaders, and their support needs concerning further training, tools, resources, etc. to establish successful ESD initiatives such as "green schools". The authors are making an effort to analyse the success factors and provide inspiration for schools to become leaders of necessary changes, building their own local and wider networks. The research aims to bring together policy and practice solutions to the Berlin Declaration's definition of the whole school (whole institution) approach: "recognizing that learners and the school community become meaningfully engaged in sustainable development through democratic participation when their institutions become living laboratories for participation and active citizenship, equity and gender equality, health, connections with nature and respect for the environment, energy efficiency and sustainable consumption, and where learning is experiential, action-oriented, localised and culturally specific, allowing learners to learn what they live and live what they learn".

- What are the main elements of education for sustainable development?
- What approaches to education for sustainable development have been proven to be successful?
- How can a whole school approach support ESD?
- What is the role of different stakeholders in successful ESD?

The main challenge ahead has been articulated by Daniella Tilbury, former UNESCO Commissioner on Education for Sustainable Development (ESD). She has urged educators to acknowledge that the schools considered exceptional have been educating political and business leaders who are not agents of sustainability, but rather contribute to an unsustainable governance. It can also be illustrated for

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example by the total lack of critical thinking around the mask mandates that have been defined as one of the greatest recent dangers to the environment while implemented without any sound scientific argument on their benefits to public health.



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## EDUCATION FOR SUSTAINABLE DEVELOPMENT DEFINED

Education for Sustainable Development has been defined by various policy actors as follows:

"Education for Sustainable Development allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future.

Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption.

It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. Education for Sustainable Development consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

Education for Sustainable Development requires far-reaching changes in the way education is often practised today" (UNESCO, 2014).

"ESD is essential for the achievement of a sustainable society and is therefore desirable at all levels of formal education and training, as well as in non-formal and informal learning." (Council of the European Union, 2010).

"ESD is about the learning needed to maintain and improve our quality of life and the quality of life of generations to come ... ESD enables people to develop the knowledge, values and skills to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future" (Sustainable Development Education Panel Report, 1998).

The most recent definition is included in the Berlin Declaration on Education for Sustainable Development adopted by participants of the UNESCO World Conference on Education for Sustainable Development:

"Education for Sustainable Development (ESD), anchored in SDG 4.7 and as an enabler for all 17 SDGs, is the foundation for the required transformation, providing everyone with the knowledge, skills, values and attitudes to become change agents for sustainable development. ESD enables learners to develop their cognitive and non-cognitive skills, such as critical thinking and competences for collaboration, problem solving, coping with complexity and risk, building resilience, thinking systemically and creatively, and empowering them to take responsible action as citizens, fulfilling their right to quality education as defined in SDG 4 -Education 2030."

The declaration emphasised that "ESD must be based on and promote respect for nature, as well as human rights, democracy, the rule of law, non-discrimination, equity and gender equality. In addition, it should promote intercultural understanding, cultural diversity, a culture of peace and non-violence, inclusion and the notion of responsible and active global citizenship." In the current paper, the authors consider this definition as the guiding one for the research undertaken.

## INTERNATIONAL AND EUROPEAN POLICY CONTEXT

Sustainable development has been defined by the United Nations (UN) as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The three crucial elements of efforts towards sustainable development have been identified to be economic growth, social inclusion and environmental protection. For this to be achieved, the UN defined



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the 17 so-called Sustainable Development Goals (SDGs). The main aim is to build an inclusive, sustainable and resilient future that provides a hopeful outlook for both people and planet. The most fundamental for the SDGs to be achieved is to eradicate poverty globally, and that calls for action in order to promote sustainable, inclusive and equitable economic growth, creating better opportunities for all, reducing inequalities, increasing the quality of life for the most deprived, fostering equitable social development and inclusion, and promoting integrated and sustainable management of natural resources and ecosystems. While this to be achieved needs intervention in a number of policy areas, it is obvious that education has a crucial role to play in meeting these ambitious, but also vitally important goals.

Sustainable development is closely interlinked with, but not restricted to green policies and climate change action. Given the fundamental importance of eradicating poverty for a sustainable future, climate change awareness and action are crucial for sustainable development, and left untacked undermines other efforts taken for achieving the societal goals, but in the framework of ESD it is equally important to emphasise that failing to meet the societal goals, endangers the goals toward the environment, and vice versa. Thus, ESD should aim for a balance that does not promote and celebrate “green” initiatives in case they increase global poverty and/or social exclusion.

Education for sustainable development has been on the global agenda since 1992 when The Rio Declaration on Environment and Development and Agenda 21: Programme of Action for Sustainable Development were adopted at the United Nations Conference on Environment and Development in 1992 in Rio de Janeiro, Brazil.

In November 2019, the 40th session of UNESCO General Conference adopted a new global framework on ESD called ‘Education for Sustainable Development: Towards achieving the SDGs’ or ‘ESD for 2030’ The framework tackles the crucial question of encouraging learners to undertake transformative actions for sustainability, the relationship between transformative changes and individual actions, and the link between the widespread implementation of modern technologies and sustainability - technology as an enabler to solve certain challenges and the newly emerging challenges related to technology use. It defines the types of actions countries are required to take and the support UNESCO is offering to this. Subsequently, UNESCO also published a Roadmap and a Toolbox related to the Framework.

Some pedagogical approaches and methodologies have been identified by international policy documents as beneficial for developing ESD skills, namely critical reflection, systemic thinking and analysis, participatory and collaborative learning methods, and creative thinking about future scenarios. A large number of successful initiatives have been implemented outside of Europe that could have enriched the current paper, but due to the European nature of the assignment this was not possible.

The United Nations Economic Commission for Europe (UNECE) developed a strategy on education for sustainable development in 2005, 10 years prior to the definition of the SDGs, to support achieving the UN Millennium Development Goals (MDGs), in order to support countries in designing education systems that facilitate knowledge of and skills around sustainable development, building competence and confidence, and increasing opportunities for leading healthy and productive lifestyles in harmony with nature and with concern for social values, gender equity and cultural diversity. It promotes the inclusion of education for sustainable development in curricula at all levels of education from early childhood to adult learning.

In the European Union, the current European Commission has made a strong commitment towards delivering on the SDGs. As part of these policy efforts, the European Skills Agenda for sustainable competitiveness, social fairness and resilience was presented in 2020. This policy document – although primarily forming the basis for adult learning initiatives, given the fact that it is a lifelong learning policy, it is considered relevant for the current paper in the real meaning of lifelong learning that includes the years of formal education. It also gives guidance for the nonformal and informal providers within the



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whole school ecosystem. The document promises to support the delivery Principle 1 of the European Pillar of Social Rights, namely the “right to quality and inclusive education, training and lifelong learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market”. It contains 12 ambitious actions with very strong incentives for stakeholder engagement, including the engagement of the private sector and private funding. The first two actions, the Pact for Skills and strengthening skills intelligence, together could support education policy in re-defining outdated curricula and support the acquisition of the necessary skills for all children. They also promote the engagement of stakeholders, thus making the case for the whole school approach. This - as well as open schooling approaches that are partly overlapping with the whole school approach - is also supported by two other actions, the one on individual learning accounts, making the recognition of skills acquired informally or non-formally more systemic, and the one on creating an environment that supports private investment in education businesses being one of the stakeholders with well-regulated roles in the formal education ecosystem<sup>1</sup>. The proposal heavily promotes the inclusion of green skills as well as digital skills in curricula and education in general. STEM skills remain high on the EU policy agenda as they are of vital importance for sustainable technological innovation, and they are accompanied by promoting entrepreneurial approaches and an emphasis on transversal skills. The agenda also promotes skills development in later stages of life. Schools may play an important role in this if they adjust their approaches to local communities, and become centres of learning for all community members at all stages of life.

In the EC’s programme for the European Education Area by 2025 (2020) digital and green transitions of education are a promise. It also puts a major emphasis on the development of transversal competences that have been defined as crucial in education for sustainable development, especially critical thinking, entrepreneurship, creativity and active, participatory citizenship. It is also main goal to increase the inclusiveness of formal education systems as well as providing alternative pathways for the acquisition of skills. The strategy puts a major emphasis on teachers, their recognition by societies and their professional development needs. The strategy fails to address school leadership as the major driver of the necessary changes, and thus the related challenges as well as the necessary conditions.

The EC Communication on the European Green Deal in 2019 mentions education and calls for joint action in the field of skills as well as mentions financial activators of making school buildings more sustainable. It also proposes a competence framework that will be developed by the EC on sustainable development and climate change. This document proposes that after taking action rather slowly on the SDGs the EU should become a global role model, and this is only possible if education systems undergo the necessary changes.

In the beginning of 2021, a Proposal for Council Conclusions on learning for environmental sustainability has been presented by the EC after a public consultation. This document implements an approach that calls for a whole school collaboration, acknowledging the educational responsibility of all educators, not restricting this to professionals, and highlights the need for a holistic approach to skills acquisition. While it primarily puts emphasis on environmental competences, and no other elements of education for sustainable development, it could be a major policy instrument to recognize the necessity of a whole school approach in the whole field, not only the environmental education angle. The lack of a more holistic vision on education for sustainable development has been highlighted by a number of stakeholders in the public consultation, but not taken into account at the final drafting.

The overarching aim of both UN and EU policy initiatives is to incentivise and support the development of national and local policies and practices around ESD. An example of translating the international policy

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<sup>1</sup> The Council of Europe Guidelines to support equitable partnerships of education institutions and the private sector offer a good framework for this



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documents into a national action plan is the Dutch DuurzaamDoor<sup>2</sup>, a government initiative established in 2017 and executed by the Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland) that promotes the whole school approach and the engagement of stakeholders in the education process quoting that “the whole school approach to sustainability brings together what is taught, how it’s taught, extracurricular activities, teacher training, decision making processes, the physical buildings, the environment and the whole community.”.

## RESEARCH DESIGN, METHODS AND MATERIAL

The current research is a result of a mix of internal and external desk research. For internal desk research, partners in the EEPN network provided descriptions of current research as well as inspiring practices and policies in their own fields and/or countries. Some of the material provided was only available in the form of internet links, and thus the internal desk research was directly linked with the external one: internet search for more research and practices for comparison, as well as analysis of existing EU documentation in the field. In the case of resources available in languages beyond the linguistic scope of the research team, we were relying on details provided in English by network partners.

Partners provided a total of 81 resources, of which 16 were originally intended for the current research paper focusing either the ESD or whole school approach or both. The authors have also reviewed submissions that were not labelled as ones intended here, and as a result, came up with the list of 20 practices analysed in the paper that support and promote ESD as a whole, or one or more important aspects of it.

The choice of examples analysed for the current research was based on the recommendations of EEPN project partners rather than on the research into the effectiveness or impact of the practices. At the same time, the main focus was on offering a diverse pool of examples to show diverse approaches leading to similar results to raise awareness of diversity and cultural differences.

When designing the research, the above listed crucial aspects were taken into consideration. An effort was made to choose examples for analysis in all fields and with different scopes (local, regional, national). The guiding principle at analysing the practices was to explore how various examples are related to and rooted in research evidence. The aim was to offer an analysis on the basis of the methodological framework Theory of Change (ToC). This methodological tool is used by many different organizations ranging from governmental bodies to (large) corporates and NGOs to support the processes of policy and project development. However, ToC was initially developed as an evaluation tool. In this process, the ToC model’s outcomes – and with that, impact – in an ‘outcome pathway’ (Taplin et al. 2013). The ToC framework works as follows:

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<sup>2</sup> <https://www.duurzaamdoor.nl/education-sustainable-development-netherlands>



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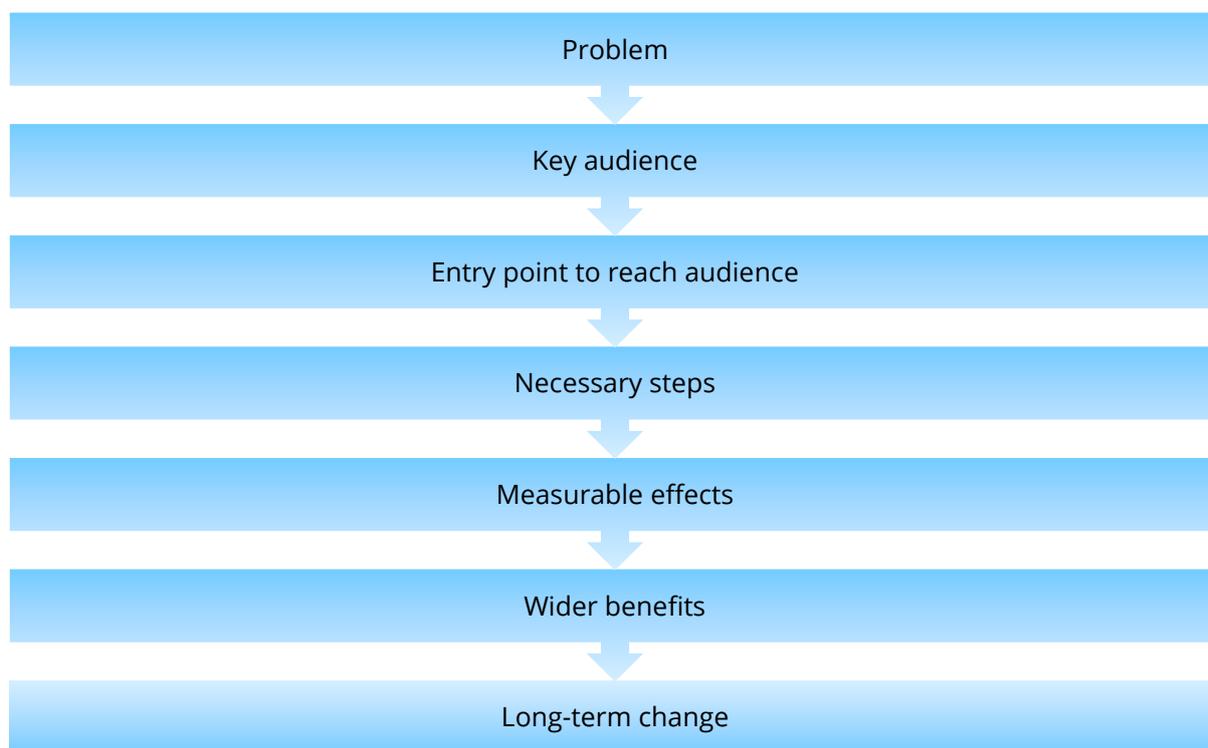


Figure 2 – Theory of Change Model

An important step in evaluating projects from the framework of the ToC is identifying what (pre-) conditions must be put in place to reach these goals. The success of this model is to be able to demonstrate progress by evaluating the outcomes as evidence to what extent the goals are achieved. Through six different questions, key assumptions will be defined that together answer the question: “What is the long-term change you see as your goal?” In this way, the ToC methodology provides a structured description and elaboration on the questions what, how and why. In doing so it shows how a specific project contributed to a desired change and how that development can be expected in a particular context.

Our scope was limited, thus the choice of examples analysed does not indicate that they are to be considered ‘the best’, but rather as an inspiring collection. However, the added value of the current research is that it is based on the knowledge and experiences of the diverse network of EEPN, and thus not restricted to the outreach of the research team.



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## ANALYSIS OF CHOSEN EXAMPLES

### DRAGONFLY

Dragonfly, an educational programme for elementary school children (mostly aged 8-12) started in 2008 and it has co-operated with over 300 schools in Hungary, and Hungarian-speaking institutions in Romania, Ukraine, Slovakia, Slovenia and Serbia reaching several thousands of teachers and students each year. The main goal was to provide schools with a visually attractive literary and ecological children's magazine for free and instructing the teachers about how to use it in their everyday work in the form of teaching notes as well as teacher training. The programme's website provides over 6800 different auxiliary materials, children and teachers have the opportunity to take part in various creative competitions and tenders.

#### Learning points:

- Teachers are eager to find good quality material for ecological topics largely missing from traditional textbooks, but relevant for their students. Good quality means a) content supervised by recognised experts, b) age appropriate;
- Arts – in this case literature and graphics – is a successful vehicle to convey related messages, but it is also important that quality is ensured by professional art editors;
- Creative thinking and artistic expression tasks foster skills related to sustainable thinking, and children happily engage in them;
- Teachers need training and support material to foster learning about topics related to ecology.

### **Collaborating to transform and improve education systems: A playbook for family-school engagement - Brookings playbook**

This playbook on family-school collaboration, published in September 2021, makes the case for why family engagement is essential for education systems transformation and why families and schools must have a shared understanding of what a good quality education looks like. By providing evidence-based strategies from around the world and other hands-on tools that school leaders and partners can adopt and use in their local contexts, it aims to help leapfrog education inequality so that all young people can have a 21st-century education.

It focuses on offering ways of understanding the full landscape of family-school engagement strategies as well as expectations and their perception by parents and teacher so that communities may learn from each other but ultimately with the goal of adapting and making strategies relevant in their own contexts. Current family-school engagement work has focused much less energy and attention on transforming education systems than on improving them, and deepening the field's understanding of how to approach this goal is one way of addressing this gap.

#### Learning points:

By providing evidence-based strategies from around the world and other hands-on tools that school leaders and partners can adopt and use in their local contexts, it aims to help leapfrog education inequality so that all young people can have a 21st-century education.

It is clear from research that the expectations towards education systems are shifting with both parents and teachers shifting towards a focus on active citizenship and social-emotional learning, while both groups believe that the other wishes to focus on academic achievement. Thus, for real reform proper communication, based on equal partnership is essential.



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The playbook shows that family-school engagement — namely the collaboration between the multiple actors, from parents and community members to teachers and school leaders — has an important role to play in improving and transforming education systems to achieve four main goals:

- Improve the attendance and completion of students,
- Improve the learning and development of students,
- Redefine the purpose of school for students,
- Redefine the purpose of school for society.

## COVIDEA

COVIDEA focuses on “the whole learner” and on education in all its aspects: augmenting and underpinning knowledge and skills with character, judgement, critical faculties, ethics, and a deep and action-oriented understanding of citizenship and civic responsibilities.

The project seeks to rethink education, its content, curricula, and goals including lifelong learning, as a central enabler of individual wellbeing together with societal and economic sustainability and resilience, contributing to achieving the SDGs. It combines the best digital educational tools, curricula and technological options available to assist education systems and institutions, ensuring that learners at all levels obtain the skills, competencies and knowledge needed for happy and productive lives in a sustainable future.

### Learning points:

Experiences of school closure periods and the increased use of digital technology has highlighted the need to have a broader view on the needs of the different players of the learning process in the digital environment, and when exploring the requirements for the digital age, skills and competences such as resilience, active citizenship, critical and ethical thinking, and social-emotional learning are to be given more weight than digital technical skills. These are essential for ESD.

## PHERECLOS

The PHERECLOS project builds upon the experience of Children’s Universities (CUs) in Europe and beyond. Due to their engagement with children and young people, they help to breakdown institutional boundaries between universities and the wider society. CU often sit between key organisations in the educational and social landscape, collaborating with both.

The project has established “Local Education Clusters” (LECs), bringing together schools and further relevant actors in the educational ecosystem of 6 diverse pilot regions. These actors may be universities, governmental and non-governmental organisations, companies, charities, museums or other knowledge providers. The LECs have been incubators for enabling dialogue and for setting-up joint activities between these organisations at the overlapping edges of formal and non-formal education. Each LEC has a different focus, but some of them tackle various aspects of ESD such as environmental protection, critical thinking, and active participation.

Additionally, it builds upon the theories of science capital and open schooling, using the experience that children’s universities have made in the so-called Third Mission of universities. It takes into consideration the experience of other education organisations that build on holistic approaches to education, and brings together formal, non-formal and informal education. The programme brings schools and further relevant actors in the education ecosystem of a particular region together into (local) education clusters, supported by a peer mentoring programme. These clusters serve as incubators for enabling a dialogue between various parties and help to set up joint activities in (formal and non-formal) education and to



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develop collaborative learning environments as experimental testbeds for schools. At the same time, they impact on the quality of science engagement opportunities in these areas.

#### Learning points:

The following five criteria were defined as 'essential' in the cases analysed:

- involve schools, universities or research centres in a relevant role; schools shall be in the centre
- pursue an approach of cross-sectoral cooperation and mutual learning (at least one non-school stakeholder is involved from research, academia, industry, policy, civil society organisations)
- have a regional focus – open exchange with neighbourhood and local society
- be suitable to enhance diversity and inclusion as a key for learning

The project shows that open schooling is an approach that creates an engaging environment for children's learning while strengthening links to local communities.

### **PHERECLOS Briefing Papers**

The implementation of Open Schooling as a strategy requires a process of institutional learning and a fundamental change in how schools are perceived by various stakeholders. In order to get their commitment, evidence needs to be based on authentic first-hand insight into well proven practices, as well as on a thorough analysis of policies and structures which are relevant for the school sector. This set of Briefing Papers has been developed in a way that can support local advocacy work towards various levels of policy making, focusing on thematic areas identified by LEC partners as possible barriers, but each taking the perspectives of main open schooling stakeholders: school students, teachers, school heads, parents and teacher training into account.

The following thematic areas have been identified as relevant for local advocacy:

1. The Benefits of Open Schooling on STEAM learning
2. School Autonomy and Stakeholder Engagement in Open Schooling
3. School Leaders and Teachers in Open Schooling
4. Non-formal Education Providers in Open Schooling
5. Financial Aspects of Open Schooling
6. Physical and Legal Barriers to Student Participation in Open Schooling.
7. As the Briefing Papers were developed during the global school closure period due to the COVID-19 virus, and additional Paper was added on Lessons Learnt from COVID-19.

#### Learning points:

Advocacy, a consistent and evidence-based approach to advocate for ESD programmes is an essential tool for successful implementation. While general legislative frameworks may already provide for such programmes, there are some elements of other education legislation or policy that may prevent successful implementation. The most important factors to review and advocate for are:

- Accessibility
- Autonomy
- Proper financial provisions

Additionally, having a whole school approach needs to be advocated for, especially to ensure that non-formal providers and community actors are part of implementation.



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## **ETUCE reaction on the “Council conclusions on European teachers and trainers for the future”**

This project, implemented in June 2020, cooperated with 51 countries of Europe with ETUCE membership. With that, ETUCE reacted on the adoption of the Council conclusions on European teachers and trainers for the future by the Education Council of the European Union on 26 May 2020. It is a whole school approach for sustainable development, with a particular focus on the role and competences of school leaders to support the implementation of it

### Learning points:

It sees teachers and trainers as an indispensable driving force of education and training. ETUCE focuses on ensuring ‘inclusive, socially just and equitable’ teaching and learning, as well as on preparing and supporting teachers and trainers to work with learners from a variety of socio-economic, linguistic and cultural backgrounds and with different needs. The project aims to improve initial and continuous professional development for the teachers and to update competences, skills, and pedagogies. Furthermore, it demands that education ministers in the EU respect collective agreements, and to promote social dialogue and collective bargaining in order to ensure high quality education systems and higher working conditions for teachers.

## **ÖKOLOG**

The project “ÖKOLOG” was conducted in 2020 and is a whole school approach for sustainable development, with a particular focus on the role and competences of school leaders to support the implementation of it. Because it is a concrete project with a concrete SDG connection that has been tested in practice. Throughout Austria, ÖKOLOG schools work on a wide variety of projects related to "sustainability", "ecology", "environment", "cultural diversity" and achieve remarkable results. Ecological and social awareness has become the norm at many ÖKOLOG schools. However, environmental awareness often only emerges over the course of several years and changes in awareness and behaviour require a longer process.

### Learning points:

The case study by Fleiß (2018) on the impact of ÖKOLOG in Viennese schools with a high proportion of pupils with a migration background shows that environmental topics are well suited to support the integration of students in two ways:

- Environmental topics have a positive effect on the language acquisition of pupils,
- promote cohesion in the class and the school climate in general, which results in an increase in well-being.

As a result the project has shown increased consideration of sustainability topics in lessons and changes in teaching methods. Frontal teaching has declined and, in turn, exploratory, open and discovering teaching, project teaching and social learning have become established as teaching methods (Fleiß, 2018) and it has helped ecological awareness to become the norm.

## **Projeto MAIA / The MAIA Project - Monitoring and Research in Pedagogical Assessment**

"The MAIA Project – Monitoring and Research in Pedagogical Assessment was designed taking into account that the improvement of student learning is strongly related to the pedagogical practices of schools and teachers. It is a multidimensional and complex project by nature, within which curricular and



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pedagogical issues, theoretical and practical issues of teaching, learning and assessment, issues of the continuing education of teachers and teachers as teaching professionals are discussed.

The publication *Quality in kindergartens and schools* consists of 7 volumes. The publication was created under the auspices of the Ministry of Science, Education and Sports of Portugal in cooperation with all public institutions in the field of education. Since 2019, the National School for Leadership in Education has been offering a training program for school teams accountable for leading quality assurance and school self-evaluation following the national guidelines-protocol.

#### Learning points:

Monitoring is an essential element of implementing new pedagogical approaches, and teachers and school leaders need to take a researcher-teacher approach to ensure quality. Standards and guidelines are essential for education professionals for this. As ESD is a new concept, the implementation of tools like this can prevent mishaps in implementation and ensure the balance of green and other elements of ESD.

### **Open Schooling Roadmap: A Guide for School Leaders and Innovative Teachers**

The OSOS Roadmap supports the diffusion of the Open Schooling Model in schools all over Europe. The large-scale implementation work with 1,200 schools across Europe offered a unique opportunity to test the effectiveness of the proposed Roadmap. The Roadmap proposes a concrete overview of the implementation of open schooling approaches, offering a clear description of the necessary steps that schools will need to take in order to become hubs of responsible innovation that bring together as many educational stakeholders as possible with an aim to produce ideas and solutions that address local issues and challenges.

#### Learning points:

Applying the OSOS approach in local settings has made it clear that schools have much to gain by fostering connections between formal and informal learning, between existing providers of education and new entrants. The OSOS approach supports the transformation of schools into open schooling environments. The project team together with numerous experts and, national coordinators, local governments, school leaders and teachers have developed tailored package of supporting materials, such as the OSOS Self-Reflection tool and the Open School Development Plan that can support schools to transform into Open Schooling Hubs, offering a clear mentoring approach to schools with a vision for the future.

### **Digital School Awards**

The Digital Schools Awards European pilot programme is an initiative to promote and recognise the use of digital technology to deliver the best educational experience for pupils at secondary school level in Europe. It is focused on strengthening the professional profile of teachers by developing resources and learning experiences that are relevant and focused on enhancing digital education practices.

The main aim of the programme is to build on the already significant progress made by schools in digital learning and teaching and to encourage them to strive for further progression and improvement. The programme also endeavours to raise the profile of digital education practices in schools and recognise the achievements of schools and teachers. It is linking the flourishing Digital Schools Awards initiative with the European SELFIE self-reflection tool and exploring how it can make a sustainable impact in schools in Europe. Schools and teachers who participate in the programme will have their practices



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acknowledged and will join a growing community of digital schools in Europe. However, in order to join the project the interested schools need to adopt a whole school principle.

#### Learning points:

Recognition and celebration of good practices and educational programmes supports education professionals in maintaining their commitment to such programmes, and they also support raising awareness and helping community recognition. As digital transition is an essential part of ESD, such recognition can boost teacher and school leader commitment. Awards have been identified as an enabler in teacher and school leader retention by an earlier paper in EEPN (Kelly 2019).

### **mSchools - Higher quality, more sustainable, inclusive education for everyone**

mSchools is a global community of teachers, researchers and policy-makers committed to driving change in education through leveraging technology in learning. Built on innovation, collaboration and open communication. mSchools exists to support educators everywhere in using technology to make transformation a reality in their classrooms, hence enabling their students to become active and responsible digital citizens with the necessary skills to navigate today and tomorrow's world. The aim is to share in community the best classroom resources and practices to accelerate digital skills. As part of its activity, it has initiatives as toolboxes on how share with other educators the mobile technology in the classroom (<https://mschools.com/initiatives/>); Days of reflection - a meeting of educators to reflect on the intersection of technology, innovation and humanism in education- as the next one in March'22; Cycles of conversations to exchange knowledge, with panels and learning experiences (as the EdChange 2021, about how to adapt the school to a changing digital world); or Student Awards, for example in educational robotics. And, other mSchools initiative very successful is the EduHacks, which is a large-scale co-creative process, based on design-thinking methodology that connects and allows the educational community to design and test innovative classroom experiences for all levels and subjects. At a systemic level, mSchools advocates for the digital transformation of schools and organizes a yearly seminar on this topic called Changing Education Together (CET) for school directors, administrators and policy-makers at the MWC Barcelona.

### **EEPN – Supporting the implementation of Policy recommendations**

The European School Heads Association has utilised the EEPN project for training highly motivated school principals to become trainers. Trainings are also intended to prepare teachers for school leader careers. In trainings and seminars, about 80 school principals have been introduced to the recommendations and activities of EEPN in order to strengthen the relevance of the recommendations for the education sector and support their implementation.

The Policy Recommendations of both Year 1 and 2 are relevant for implementing the whole school approach, to broaden the pool of educators as well as competences curricula.

#### Learning points:

School leaders as policy makers and policy advocates play an important role in modernising education and making them more relevant for the challenges of the 21<sup>st</sup> century. There is a need for more concrete policy recommendations based on research outcomes to properly support them in this.

### **Project Blended learning in vocational education and training (BlendVET)**

Digital competencies are key to today's and tomorrow's world of work, and Vocational Education and Training (VET) needs to keep pace with these developments, and also crucial in ESD. The project advocates that is not enough to introduce digital competencies into the curricula, but education itself



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needs to be redesigned, as education is currently not keeping pace with the potential of digital developments. A didactic solution that addresses this issue is blended learning (any educational activity that combines traditional classroom activities with activities that use digital technology). The project therefore addresses the need of VET providers to get focused professional support to introduce blended learning in their daily practice. Project will provide several concrete results among which the most important are training for teachers and headmasters to support the implementation of blended learning, evaluation of piloting of blended learning at schools, compendium of best practices of teacher plans and developed digital teaching and learning materials.

#### Learning points:

The project fosters cooperation between the Donor States and Slovenia, empowering students by including them in the development of digital learning materials, and creates online communities of headmasters, VET teachers and ICT professionals for joint development, mutual learning and exchange of experiences. The goals are the following three:

- To develop and test school strategies for the effective implementation of blended learning,
- to support teachers for the preparation of instructions plans and the implementation of blended learning, and
- to develop digital competencies of teachers for the development and use of e-learning solutions.

### **ParENTrepreneurs competence framework**

ParENTrepreneurs aims to build the theoretical basis of trainings for educators to become more entrepreneurial themselves and to enable them to support children in developing entrepreneurial skills, most of which are also skills necessary for sustainable thinking. The framework is built on the ENTRECOMP framework. ENTRECOMP's structure has three general blocks -ideas and opportunities, resources and "into action"- and 15 sub-competencies are classified in those blocks. After consulting with reference families, experts, policymakers and professionals related to Entrepreneurship Education, 10 competencies were identified and concretize, guiding the concept of Entrepreneurship Education in the family environment. These competencies are the starting point for the design of knowledge and didactic products that will allow families and stakeholders to create a favourable environment where entrepreneurship is the engine of children's growth and empowerment. While the framework and the subsequent training have originally been developed for parents as educators, it has been successfully used in teacher and school leader training in various education contexts.

#### Learning points:

Educators need to consistently develop their own skills in order to foster skills development. When it comes to 21<sup>st</sup> century skills – including resilience, critical thinking, active participation that are key to ESD and offered in this programme, trainings for professional educators and parents can be fully or nearly identical (especially in light of finding in a previous EEPN research paper (Verboon-Salamon 2021). During the implementation, it became clear that the competence framework is relevant for educators from different parts of Europe, and educators working in highly different education systems and realities still have similar needs. Thus, European approaches are relevant and useful regardless of the diversity of education systems.

### **Parent'r'us**

Parent'r'us main aim is to support teachers increasing parents' engagement in children's academic achievement and well-being at school by extending their competences throughout an innovative mentoring model approach integrated in a holistic approach.



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The project focuses on building children's well-being and bonds to school. Furthermore, the continuity of children's experience across environments is greatly enhanced when parents and staff members exchange information regularly and adopt consistent approaches to socialization, daily routines, child development and learning.

The success of the programme is based on mentoring of parents and teachers by parents, supporting mutual understanding. This leads to sustainable change and thinking.

#### Learning points:

An equal partnership between the main educators of children – parents and teachers – is essential for sustainable increase in learning outcome. This often needs educators to broaden their horizon and learn more about diversity, a basis for sustainability. Such partnerships are key enablers of better learning. In the case of the programme, the main target groups are teachers and vulnerable groups at high risk of or already living in poverty. This kind of collaboration can lead to a better understanding of the importance of the non-green elements of ESD.

### **REFLECTING4CHANGE**

The project "REFLECTING4CHANGE", promotes the use of self-reflection tools to support innovation and systemic change in schools. It aims at proposing an advanced support framework, as well as a set of core policy recommendations, to schools seeking to introduce a type of holistic change that ensures a meaningful uptake of sustainable innovation, with an emphasis on achieving improved learning outcomes as set by the Europe 2020 strategy.

In R4C approach, innovation is understood in terms of a school's pathway to digital maturity (e-maturity) and its comprehensive relationship to the use of ICT, as well as a school's pathway to openness demonstrated in its relationship with external stakeholders, in parental engagement, in fostering the well-being of its community as a whole, in its ability to combine the delivering of the curriculum with a study of local challenges, in its willingness and capacity to share its achievements with other schools and in its engagement with contemporary Responsible Research Innovation (RRI) challenges. The consortium has organized and coordinated large scale pilots with schools to evaluate the effects of, and systematically validated the proposed approach by implementing numerous activities and exploiting at the same time the opportunities offered by major ongoing initiatives and reforms, in Greece, Portugal and Italy. The project was implemented with a bottom-up approach in around 300 primary and secondary schools, in urban as well as in rural areas while the sample for the validation of the proposed approach consist of about 1,500 teachers and 15,000 students.

#### Learning points:

Focusing on ESD in the framework of the whole school approach requires fundamental changes in many schools, and schools are relatively resistant to change. Self-reflection is essential for sustainable change in education. Schools – namely school leaders, teachers, parents, students and other stakeholders – need a systemic approach to sustainable change. Digital tools play an essential role in this and also key in the framework of the ESD concept.

### **NEMESIS New Educational Model Enabling Social Innovation Skills development**

The Nemesis project aimed at implementing Social Innovation Education (SIE) in primary and secondary schools across Europe. SIE is a learning approach focused on enabling students to explore and find



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creative solutions to social and sustainability challenges. It is about encouraging young people to re-imagine the world and empowering them to bring their vision to life. The Nemesis project has enriched the change management approach by involving the external stakeholders and introducing co-creation as a method of cooperation and creation. Over fifty community-based projects in schools in the partner countries.

Co-creation labs are the basis of the NEMESIS approach an open environment where different stakeholders gather together with a common goal: collaborate towards the identification of local community based challenges with the potential to be transformed in a project based learning opportunity.

The activities are based on participatory design techniques. They are implemented by teachers with the support of the consortium partners. Participants consist of students, parents, teachers and social innovation practitioners.

The project developed:

1. A framework for teaching social innovation skills by combining innovative pedagogies and learning models, the philosophy of open technology, and participatory relations and processes.
2. A methodology that brings together students, teachers, parents and education experts with social innovators to collaboratively design educational projects and collaborate to solve real community and sustainability challenges.
3. Created a European community of social innovators willing to engage with the students, building bridges between education and innovation communities.
4. Developed an open learning platform with useful resources to educators interested in testing/adopting the model.
5. Developed a Serious Game introducing SI and SDG
6. Give useful resources and tips to break down organizational barriers and facilitate the adoption of the model.

Learning points:

The NEMESIS project showed that SIE holds a strong potential as an educational approach to increase students' several level of engagement. More precisely:

- In terms of emotional engagement, SIE makes students' voices heard, valued, and acted upon by adults. As an extension a feeling of being important is generated leading to intrinsic motivation, confidence, sense of belonging and self-empowerment.
- In terms of cognitive engagement, SIE's student-center approach, enables students to link their projects to their lives and in this way to understand the real-world value of their learning. In this way they develop a sense of ownership towards their learning leading to cognitive engagement.
- In terms of behavioural engagement, SIE cultivates a sense of belonging as members of a group that supports, accepts, and respects one another. In this way, students work collectively and feel they are respected by adults which increases participation, effort and positive attitude towards school.
- In terms of agentic engagement SIE empowers students to make decisions and influence changes in their own schools and community. It supports their autonomy and confidence and enable them to see clearly that they can have an impact on their learning but also on their lives, increasing thus their sense of agency.



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## **Plastic Free Heroes - Developing 21st century competences through inquiry-based learning and social activism**

The PLASTIC FREE HEROES project suggests an innovative experiential learning approach that combines inquiry-based learning and social activism that builds on the use of plastic as a conceptual context for learning, in order to enable students to learn not just the facts, but develop problem-solving and critical-thinking skills that can be applied to real-life situations. The selection of plastic as an effective context for learning is based upon the following factors:

Plastic waste constitutes a global problem that harms the environment at an alarming rate and poses threat to human health. Plastic waste offers a subject-appropriate context for providing multiple opportunities for the development of various cross-curricular skills (i.e. entrepreneurial logic, critical thinking, environmental citizenship etc.) in parallel with the teaching of a wide range of disciplines such as STEM, economics, ICTs and social sciences. It constitutes part of most people's daily practices and students are familiar to this topic and therefore it's easy for them to make personal connections, use prior experiences and engage in purposeful and fulfilling learning.

The PLASTIC FREE HEROES project has developed an innovative plastic waste educational package for teaching and learning which incorporates two innovative products:

- The PLASTIC FREE HEROES Curriculum that includes content-related plastic waste reduction and recycling learning materials using inquiry-based learning and social activism.
- The PLASTIC FREE HEROES Teachers training resources and online courses.

The suggested curriculum aims to inspire the next generation towards a more sustainable and responsible use of plastic and enable transformative action on plastic waste in their schools through innovative pedagogies. The teachers' resource pack will improve the competences of teachers in innovative teaching practices such as inquiry-based learning (IBL) and social activism leading to a multitude of 21st century skills<sup>3</sup>.

### Learning points:

Regarding plastic pollution education the project revealed that in most countries teachers use the same methods of teaching mainly discussions in class and lectures, and not through any other interactive methodology, such as IBL including online tools.

The preferred ways of teaching and tools were also similar in all countries and included:

- Visits from experts
- Excursions and hands on experiential learning
- Visual and interactive tools

The use of online platforms received a small percentage in countries indicating the need to introduce such methodologies in school education. Teachers prefer to learn through more trainings (webinars, seminars, workshops) and online sources and they require more scientific information (data and statistics) on plastic pollution.

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<sup>3</sup> <http://www.ibe.unesco.org/en/glossary-curriculum-terminology/twenty-first-century-skills>



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Barriers mentioned by teachers in plastic pollution education included the lack of time, implementation of policies in schools and the exam oriented school environment.

## **ChildUP – Children Hybrid Integration: Learning Dialogue as a way of Upgrading policies of Participation**

CHILD-UP aims to propose an innovative approach to better understand and improve the integrating, life and social conditions of migrant children. This project analyses and supports the children's active participation in choosing the ways through which they can better integrate. It investigates the social conditions of migrant children's integration through social participation with taking in primary account the gender differences, legal status and age groups.

The CHILD-UP project offers:

- A research overview with both quantitative and qualitative data on the children integration process in the education environment, collected all over Europe through the project's main research partners.
- Tools for self-assessment of interventions supported by educational institutions.
- Recommendations for good practices at the micro-level (specific interactional activities) and meso-level (schools and other local organisations).
- Policy briefs, after research reports, in the form of recommendations, for the benefit of decision-makers, with the objective to enter the policy debate.
- A list of already existing and effective training instruments to be implemented locally by teachers and educators.
- Guidelines and training plans to enhance dialogue, agency and hybrid integration in multilingual and multicultural contexts.
- A final report including all results, tools and recommendations developed through the project, suggestions on social implications to ensure that the benefits of the project will endure beyond its lifetime and evidence-based policy and educational recommendations for public authorities and institutions dealing with the issues related to children cultural integration.

### Learning points:

Child agency and its recognition are key to ESD considering children as enablers and beneficiaries of a sustainable future. Proper facilitation of child agency with an equitable and inclusive approach are key. Children, the students of schools are to be considered as competent partners in the whole school approach to ensure that their current and future needs are both catered for.

## **Klima Schule 2015-2016**

The Hanseatic City of Hamburg has stood out for years in its efforts to promote Education for Sustainable Development in Germany. It is both a municipality and a federal state and has developed an ESD master plan for various fields of action.<sup>4</sup>

The climate schools are a good example of how education for sustainable development in the sense of climate education can be successfully implemented in schools.<sup>5</sup> They follow the whole institution approach, which stands for a holistic concept that integrates all aspects – infrastructure, organization, curriculum, learning processes and methods – towards ESD.

<sup>4</sup> <https://www.hamburg.de/nachhaltigkeitlernen>

<sup>5</sup> <https://li.hamburg.de/klimaschule/>



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"For the first time, the climate schools are developing their own climate protection plans on a broad basis, some of which extend into the year 2030. There are currently 63 climate schools in Hamburg (as of 2019) that have planned educational and technical measures. The aim of the program is to strengthen the climate competencies of the school community and to reduce CO<sub>2</sub> emissions caused by school operations. The schools are supported in the implementation of the measures by the LI department "Environmental Education and Climate Protection" in close cooperation with the fifty/fifty staff at Schulbau Hamburg" (Source: project description <https://li.hamburg.de/klimaschule/>).

The implementation in the schools varies greatly. An example is the Emilie Wüstenfeld Gymnasium, which, in addition to a climate protection plan for the school, has also undertaken a climate study group, a survey among the pupils on the subject of eating habits, a deposit collection box and the trial introduction of carbon dioxide measuring devices in some classrooms.<sup>6</sup>

Similar programs exist in some other federal states, e.g. North Rhine-Westphalia (School of the Future)<sup>7</sup>, Berlin (Berlin Climate School)<sup>8</sup> or Bavaria (Environmental School).<sup>9</sup>

#### Learning points:

Climate protection programmes are an important kind of ESD programmes, sometimes becoming full-fledged ESD programmes. When built on the engagement of the school community, they are good practices of the whole school approach, bringing in a high level of commitment of all actors.

### **"Gestaltungskompetenz" (ability to shape the future) as a competence concept of ESD**

A special feature in the German process of establishing Education for Sustainable Development is the project "transfer21" (<http://www.transfer-21.de/>), which was completed in 2008, but still has an impact on school practice and professional discussion. Here, together with sustainability and futurologists, a compilation of 12 competencies was developed, the development of which is important if pupils are to develop in the sense of Education for Sustainable Development.

In their concept of competencies, de Haan and colleagues are guided by Weinert: "Competencies" are "the cognitive abilities and skills available to or learnable by individuals to solve specific problems, as well as the associated motivational, volitional (...) and social dispositions and abilities to use the problem solutions successfully and responsibly in variable situations" (Weinert 2001, quoted from de Haan 2008, p 29).

These competences are all geared towards so-called Gestaltungskompetenz. "Gestaltungskompetenz ((ability to shape the future) refers to the ability to apply knowledge about sustainable development and to recognize problems of unsustainable development" (de Haan 2008, p 31). Thus, the concept particularly emphasizes the action aspect of education in distinction to purely cognitive approaches of Education for Sustainable Development, where the emphasis is rather on a reflective ability. Accordingly, "situated learning" is the preferred method in this project.

#### Learning points:

Twelve 12 sub-competences have been identified as being important in the educational process<sup>10</sup>

<sup>6</sup> <https://www.ewg-hamburg.de/schule/klimaschule2/>

<sup>7</sup> <https://www.sdz.nrw.de/>

<sup>8</sup> <https://www.berliner-klimaschulen.de/>

<sup>9</sup> <https://www.lbv.de/umweltbildung/fuer-schulen/umweltschule-in-europa/>

<sup>10</sup> Source: <http://www.transfer-21.de/indexb4c1.html?p=222>



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1. build up knowledge in an open-minded way and integrate new perspectives
2. be able to analyse and assess developments with foresight
3. gain knowledge and act in an interdisciplinary manner
4. being able to recognize and weigh up risks, dangers and uncertainties
5. be able to plan and act together with others
6. be able to consider conflicting goals when reflecting on strategies for action
7. being able to participate in collective decision-making processes
8. be able to motivate oneself and others to become active
9. be able to reflect on one's own and other people's models
10. be able to use ideas of justice as a basis for decision-making and action
11. be able to plan and act independently
12. be able to show empathy for others

Although this approach has been an important and prominent contribution to the professional discussion for a long time, it is still not a matter of course to orientate teaching with regard to ESD in terms of design competence. However, there are professionals and teachers in various disciplines and working contexts who have undergone training in this area.



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## REVIEW / CONCLUSIONS

The projects reviewed and presented above have shown that there is a plethora of projects that support ESD or at least support aspects of it, but many with limitations. The EU-focused nature of the current paper did not allow for widening the scope to countries outside of Europe that may be ahead in the field of ESD while it might have been beneficial.

There are projects that focus on material development with main focus on environmental issues, seen ESD as an environmental educational approach and not as an approach that is cross-curricula, interdisciplinary, that touches on sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

There are some projects that contribute to the whole school approach from a different perspective by seeing the school integrated to the society and the community such as Parent'R'us, ParENTrepreneurs, NEMESIS, Plastic Free Heroes to mention a few. These approaches are far closer to the Berlin Declaration's definition of the whole school (whole institution) approach: "recognizing that learners and the school community become meaningfully engaged in sustainable development through democratic participation when their institutions become living laboratories for participation and active citizenship, equity and gender equality, health, connections with nature and respect for the environment, energy efficiency and sustainable consumption, and where learning is experiential, action-oriented, localised and culturally specific, allowing learners to learn what they live and live what they learn". They contribute to a deeper understanding of the two other main elements of ESD: fighting poverty and promoting social inclusion.

However, in all the projects that have been reviewed their approach to ESD focuses on the different aspects through engaging in problem-solving, and taking measures to minimize not only the environmental impact but the sustainable development of resources and communities. Hence, their goal is to develop in individuals a deep understanding of environmental problems as it can raise awareness for responsible decisions.

There are some important points that educators should take into account on the topic of ESD. Cultivating environmental attitudes is considered to be an essential prerequisite to pro-environmental behavior, which is one of the ultimate aims of ESD while the other two main pillars need equal consideration. In addition, children and young people are regarded to have a well-shaped mindset in order to achieve success in ESD, teachers need to consider and draw on children's agency, on their competences as citizens and human beings. What is more, the evaluation of learning outcomes in ESD should go beyond the traditional processes and should focus mainly on the development the relevant competences rather than measuring their knowledge.

ESD should be cross-disciplinary, participative, interactive, related to life, conducted in a non-authoritarian environment, cognizant of the challenges of societal diversity and co-constructed with parents and the community as well as the school.

One of the main outcomes of the some of the projects was the notion of "Classrooms linked to communities". ESD and other innovative approaches such as experiential learning, inquiry-based learning, SIE, etc. can support students to co-create social change projects together with adults and thus develop as community leaders and innovative problem solvers. In this process, a key element is the



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development of new partnerships among schools and local communities by opening up classrooms and facilitating collaborative social action projects among students and community members.

For example, empirical data has shown that this process helps students elevate their voice, develop changemaking competences and build their civic efficacy as they collaborate with adults to tackle a real challenge facing their community (Kalemaki et al. 2019; Kalemaki et al. 2021). That said, such approaches offers a genuine model to link classrooms to communities by channeling student energy and passion into projects that benefit their communities.

Creating meaningful relationships between classrooms and communities requires new ways of thinking and acting at multiple levels, from personal to systemic. At a personal level, individual teachers may need to reconsider their roles related to students, as well as how they interact with and engage them in learning. At the systemic level, head teachers might need to rethink how various structures and processes are designed to open schools to societies and elevate student's voice.

Many teachers, children and other stakeholders are not aware of the benefits of ESD as a whole school approach. However, the notion that you can develop essential competences and open up the same time to your community makes the approach very attractive.

Furthermore, the review showed that scientifically evidence-based recommendations support the adaption of successful practices and make it easier to convince teachers, and all other stakeholders to adopt novel educational practices, at regional, national and trans-national levels. However, it has also shown that there is a need for relevant teachers training. The majority of the projects have demonstrated the positive impact that ESD and innovative approaches have on teachers and their professional development. Nonetheless, they noted that understanding such pedagogical approaches and how to apply their philosophy in the classroom needs exploring, explaining and practicing. Teachers training for pre-service and in-service teachers is essential, while online teacher training courses might facilitate trans-national and trans/European teacher training.

Another finding was that ESD by its nature focuses on social needs and includes all the people from all the spectrum of society, it was especially beneficial to the students with migratory background as it enables them to think outside the box and nurtures unconventional talents and competences through participatory educational model. Therefore, ESD as a whole school approach is a valuable method to promote and address inclusion in educational settings.

ESD has been shown from the reviewed project that focused on the competence development that supports the development of 21<sup>st</sup> century skills<sup>11</sup>. So, an ESD approach that focuses on generic, relevant competence development will support the integration of the ESD into the curriculum and make it more interdisciplinary.

Furthermore, education is not an isolated affair, the collaboration between all stakeholders can support the development of a variety of educational materials and make schooling part of the society and teachers and students can connect their learning activities to real life. However, schools very often are not aware of how to introduce changes. An organisational change model will help them to identify the areas they are strong in and the areas they need to improve, introduce these change themselves, and implement only those changes that are appropriate to their school and needs.

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<sup>11</sup> <https://www.brookings.edu/blog/education-plus-development/2019/02/14/integrating-21st-century-skills-into-education-systems-from-rhetoric-to-reality/>



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The review has revealed that curriculum integration of ESD is very important for its successful adoption. Though, different countries and regions have different needs and different education systems and as a result, different approaches are needed. As a result working together with head teachers is very important for independent schools, while working with educational authorities and ministries where the educational system is centrally controlled.

Finally, evidence suggests that schools may face problems to contact and connect with stakeholders from the local communities. Local authorities and parents could play a key role as intermediaries between schools and local communities. Furthermore, parents that are involved in the educational process can offer their skills and networks to local stakeholders and communities.



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## RECOMMENDATIONS BASED ON THE CONCLUSIONS

The main policy recommendations arising from the reviewed work are:

- **Raise awareness of holistic educational approaches for social, entrepreneurial and digital competences.** Many teachers and children are not aware of what these approaches are. However, the notion that you can develop essential competences and support and engage at the same time your community makes the approach very attractive. Therefore, having ESD and other relevant approaches such as SIE on the agenda of educational institutes and teacher training organisations will help to raise awareness and spread the benefits of this approach. Raising awareness first on a regional and national levels where the local and national governments are able to support and develop novel educational approaches will accelerate the adaptation of such approaches. Furthermore, it is essential that these efforts should include the parents and the general public so they can become agents of change and ambassadors of a more holistic educational approach. Promoting evidence-based, long implemented programmes from outside of Europe can help mutual learning and awareness raising.
- **Provide evidence of the impact that ESD and other relevant approaches can have on the educational process and on competence development.** The evidence revealed for example in the case of the project NEMESIS that there is a positive effect that SIE has on students' competence development and on teachers' professional capacity. Scientifically evidence-based recommendations support the adaption of successful practices and make it easier to convince teachers, and all other stakeholders to adopt novel educational practices, at regional, national and trans-national levels. However, more research is still necessary in this field in Europe and Europe can learn from the global experience.
- **Provide relevant teachers training.** The majority of the projects have demonstrated the positive impact that ESD and innovative approaches have on teachers and their professional development. However, they noted that understanding such pedagogical approaches and how to apply their philosophy in the classroom needs exploring, explaining and practicing. A mix of theoretical and practical training courses would be necessary, primarily a co-creating, collaborative and hands-on approach would be best according to their own suggestions. Teachers training for pre-service and in-service teachers is essential, and provides a teacher training approach with the necessary materials. Furthermore, online teacher training courses might facilitate trans-national teacher training. Teacher training can be achieved at regional and national levels if universities and teacher training organisations include relevant courses.
- **Promoting ESD and innovative approaches is an approach for Inclusion.** ESD by its nature focuses on social needs and includes all the people from all the spectrum of society. It benefits students from all socioeconomic backgrounds as it enables them to think outside the box and nurtures unconventional talents and competences through its participatory model. Therefore, ESD as a whole school approach is a valuable method to promote and address inclusion in educational settings. Local and regional initiatives can assist in developing such plans and demonstrating their value.
- **Promoting ESD as an approach to competence development.** ESD has been proven through various projects that supports the development of 21<sup>st</sup> century skills. The findings need to be



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disseminated to all relevant stakeholders regional, national and international in order to promote ESD in primary and secondary educational settings.

- **Support collaboration between local communities, parents, local authorities and educational stakeholders.** Education is not an isolated affair, the collaboration between all these actors can support the development of a variety of educational materials and make schooling part of the society and teachers and students can connect their learning activities to real life. However, there are schools that are open to such actions but they are few and far between. Schools together with local authorities can introduce flexible zones, for example as project zones that encourage such collaborations and expand these activities to all schools.
- **Promote Organisational Change in schools.** Schools very often are not aware of how to introduce changes. An organisational change model will help them to identify the areas they are strong in and the areas they need to improve. In that way, they will be able to introduce change themselves, implement changes that are appropriate to their particular school and therefore introduce ESD to fit their needs. An organisational model can be applied at a school level, at the regional and trans-national levels.
- **Intergrade ESD into cross-curricula and interdisciplinary activities/topics.** A very important step for the introduction of ESD into education is its integration together with the relevant competences into the cross-curricula and interdisciplinary activities and subjects. The integration supports the seamless development of the competences because they will be part of the everyday educational activities crossing the narrow borders of topic specific teaching and as a result the relevant competences will be developed in parallel to knowledge and other skills.
- **Different curriculum adoption approaches in different settings and countries.** The curriculum integration of ESD is very important for its successful adoption in educational settings. However, different countries and regions have different needs and different education systems and as a result, different approaches are needed. In regions where schools are autonomous and independent working together with head teachers is very important in introducing those changes. While for countries where their education system is centrally controlled working together with the educational authorities and ministries is crucial in introducing changes in the curriculum.
- **Involve local authorities as intermediaries in connecting schools and other community authors.** Evidence suggests that schools may face serious problems to contact and connect with stakeholders from the local communities. The lack of structures and organizational dynamics at schools constrain the development of these connections. Local authorities could play a key role as intermediaries between schools and local communities.
- **Strengthen relationships with parents and engage them as active contributors in SI projects.** It has been evident that the involvement of parents in the learning process is an important strategy not only to empower students but also to facilitate the creation of links with the local communities. Parents are involved in co-creation processes by offering their skills and networks to local stakeholders. In fact, empowering families as active contributors at school could be essential not only to create and maintain a positive school climate for implementing ESD but also to advance community – school linkages.



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